Page

Program Sequences _____

General Application Procedures

Business and Technology Programs

Certain programs at Cuyahoga Community College require students to meet proficiency requirements in order to progress to the next level of course work within the student's major area of study. In addition to the proficiency requirements, some may also require students to complete an application for that program.

Students are responsible for meeting the admission and/or proficiency requirements for a listed program major.

Prior to taking any coursework, students should follow the regular procedures for admission to Cuyahoga Community College. These procedures can be found in the front part of the catalog under Admissions.

In addition to the admission procedures, all students must do the following:

1. If you have not earned college credit for an English or Math course through Tri-C, Advanced Placement, Credit for Prior Learning, or another college or university, you must take the English and Math assessment tests to determine your placement in these subjects. The semester English and Math courses indicated on the program sequence page(s) are the minimum levels for eligibility.

2. If indicated on the program sequence page(s), submit a completed application form to the program to which you wish to apply. Application forms may be obtained from the departmental office.

3. Complete all other requirements for your program as specified on the program sequence page(s). Additional details about the program can be obtained from the program coordinator/manager or by appointment with a Tri-C counselor.

If an application is required for your program, the application does not necessarily guarantee admission to that program.

DEFINITION OF ELIGIBILITY: Eligibility for a specific course may be demonstrated by any of the following:
  a. Completion of Tri-C's assessment with a score appropriate for placement into the specific course listed; OR
  b. Completion of the prerequisite for the course listed with a grade of "C" or higher (including equivalent courses transferred in from another college or university); OR
  c. Completion of the course listed with a grade of "C" or higher (including equivalent courses transferred in from another college or university).

QUARTER COURSES: Quarter courses may still be applied to meet degree requirements. Schedule an appointment with a counselor to determine eligible quarter courses for specific degree programs.

General Application Procedures

Health Careers

Courses in health career programs are offered in a sequence which begins in the Fall Semester (unless indicated otherwise in the application procedures listed on the program sequence pages).

Admission each year is limited to the number of openings in each program. Those students applying and meeting all of the specific admission requirements will be admitted in the order in which completed applications are received.

Those who wish to apply for any of these programs must complete the following general procedures; see the program sequence page(s) for additional application requirements.

1. Submit a completed Application for Admission to Cuyahoga Community College, unless you have previously applied. Prior Tri-C students who have not been enrolled for three years or longer must submit an application for Admission/Readmission to Tri-C. See page 20 for information on Applying to Tri-C.

2. Contact the high school from which you graduated or the agency that issued your GED and have them send an official transcript directly to the Office of the Registrar at Tri-C (P.O. Box 5966, Cleveland, OH 44101-0966).

3. Contact all colleges/universities you have attended and have them send an official transcript(s) directly to the Office of the Registrar at Tri-C. To ensure time for processing, the transcript should be received at Tri-C at least **six to eight weeks prior to the time you expect to apply** to the health career program. Applicants who have attended institutions outside the U.S. must contact the Office of the Registrar for special procedures.

4. Complete all required courses and meet the grade point average (GPA) requirement as specified on the program sequence page(s). If you have not earned college credit for an English or Math course through Tri-C, Advanced Placement, Credit for Prior Learning, or another college or university, you must take the English and Math assessment tests to determine your placement in these subjects. The semester English and Math courses indicated on the program sequence page(s) are the minimum levels for eligibility. In addition to academic requirements, programs may also require certain kinds of experience or other criteria; refer to the program sequence page(s) for additional information.

5. Submit the program's application form to the Health Careers Enrollment Center (Metropolitan Campus, MHCS 193, Cleveland, OH 44115). Please note that additional documents may be required to accompany your application form (such as additional copies of high school and college/university transcripts, even if already on file in the Office of the Registrar). You will receive directions concerning additional documents when you obtain the program's application form. Call 216-957-4247 to obtain an application.

   Any falsification of information provided in the application will automatically disqualify applicant for admission to a program.

Courses used as prerequisites or core courses for the Health Career and Nursing programs MUST have a traditional letter grade. The Pass/No Pass (P/NP) grading option for prerequisites and core courses will NOT be accepted by the Health Career and Nursing programs. Students are responsible for consulting with their program manager or counselor to determine P/NP grading options.

Required Criminal Background check (BCI): All health career programs at Tri-C are considered selective admission programs. These programs have a limited number of openings each year and have specific admission requirements that must be met prior to admission. The completion of a criminal background check (BCI) is one of the admission requirements to a Health Career program. The background checks are required in order to (i) ascertain the ability of students to eventually become licensed, registered and/or certified in their health career profession and (ii) the ability of the students to attend mandatory clinical, practicum and/or internship rotations at internal and external facilities in accordance with the requirements of the applicable program of study. **Please see** http://www.tri-c.edu/programs/healthcareers/Pages/BackgroundCheckInformation.aspx **for important information regarding the BCI requirements and processes**.

Required Immunizations: All students enrolled in Health Career programs may be required to receive or have sufficient proof of certain immunizations. See your program manager for a list of required immunizations for your program.

DEFINITION OF ELIGIBILITY: Eligibility for a specific course may be demonstrated by any of the following:

a. Completion of Tri-C's assessment with a score appropriate for placement into the specific course listed; OR

b. Completion of the prerequisite for the course listed with a grade of "C" or higher (including equivalent courses transferred from another college or university); OR

c. Completion of the course listed with a grade of "C" or higher (including equivalent courses transferred in from another college or university).

QUARTER COURSES: Quarter courses may still be applied to meet degree requirements. Schedule an appointment with a counselor to determine eligible quarter courses for specific degree programs.

MATH-1140 does not meet the admission or graduation requirement for health career degree programs. STUDENTS MUST COMPLETE A MINIMUM OF 3 SEMESTER CREDITS IN MATH-1141 APPLIED ALGEBRA AND MATHEMATICAL REASONING OR HIGHER.

ACCOUNTING

Associate of Applied Business degree in Accounting

The associate degree program in Accounting concentrates on providing a foundation in preparation for paraprofessional accounting careers and future advancement into supervisory positions. The program addresses the fundamentals of accounting education: namely, sound technical competence, verbal and written communication skills, and decision-making abilities. Current technology has been integrated to provide students with both the theory and practical skills necessary to meet the demands of today's business environment. Check with the counseling department for 2 + 2 transfer opportunities, university partner programs and continuing education hours for the certified professional.

Program Admission Requirements:
- High School Diploma/GED not required, but highly recommended.
- Eligibility for ENG-1010
- Eligibility for MATH-1250 or higher

Other Information:
- Non-degree students may enroll for individual courses, providing they meet the course specific prerequisites.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate financial and related information, both verbally and in writing, relative to their skill level with internal and external constituents, both inside and outside the field.

2. Work collaboratively, professionally, ethically, and fiduciary to pursue the corporate objectives in a manner that is within the appropriate professional code of conduct.

3. Perform accurately and apply fundamental accounting process to properly record ordinary business transactions, culminating with draft financial statements.

4. Utilize office suite including spreadsheets, database, word processing, presentation, and enterprise-wide technology to optimally perform the daily accounting tasks.

5. Recognize when inaccuracies or other issues arise, research alternatives, and proactively suggest solutions.

Suggested Semester Sequence

First Semester		Credits
ACCT-1310	Financial Accounting	4
BADM-1020	Introduction to Business	3
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
MATH-1250	Contemporary Mathematics or higher[1]	4
		14

Second Semester		Credits
ACCT-1041	Individual Taxation	4
ACCT-1340	Managerial Accounting	4
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
ECON-2620	Principles of Microeconomics	4
		15

Third Semester		Credits
ACCT-xxxx	Accounting Elective … OR	2 - 4
FIN-xxxx	Finance Elective	
ECON-2610	Principles of Macroeconomics	4
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II	
FIN-2100	Financial Management	3
MARK-2010	Principles of Marketing … OR	3-4
BADM-1121	Principles of Management and Organizational Behavior	
		15 - 18

Fourth Semester		Credits
ACCT-2995	Accounting Technology [C]	3
ACCT-2xxx	Accounting 2000 level elective	3 - 4
BADM-2010	Business Communications	3
BADM-2150	Business Law	4
PHIL-1000	Critical Thinking … OR	3
PHIL-1020	Introduction to Logic … OR	
PHIL-2020	Ethics … OR	
PHIL-2060	Business Ethics	
		16 - 17

	PROGRAM TOTAL	60 - 64

ELECTIVES

Recommended Electives   Credits

Select from the following courses to fulfill the elective requirement. Please check with counseling for transferability.

ACCT 1030	Payroll	3
ACCT 2041	Business Taxation	4
ACCT 2050	Volunteer Income Tax Assistance	2
ACCT 2310	Intermediate Accounting I	4
ACCT 2320	Intermediate Accounting II	4
ACCT 2340	Cost Accounting	4
ACCT 2500	Governmental/Non-Profit Accounting	4
ACCT 2510	Auditing	4
ACCT 2520	QuickBooks Immersion	2
ACCT 2830	Cooperative Field Experience	1 - 3
ACCT 28xx	Accounting Special Topics	2 - 4
FIN 1061	Personal Finance	3
FIN-28XX	Finance Special Topics	2-4

[1]MATH-1800-1820 may not be used to meet this requirement. MATH-1270 or higher is recommended for students planning to transfer.   [C] = Capstone course.

PAYROLL

Certificate of Proficiency

The Payroll Certificate prepares students for entry-level employment as payroll clerks. Payroll clerks are responsible for handling payroll issues, tax preparation, and year-end reporting for organizations and companies. The one-year certificate program is designed to accommodate those who are employed full-time or are attending college on a part-time basis, seeking to upgrade their existing employment skills or begin a job in payroll. This program will also help prepare those students who want to pursue certification credentials through the American Payroll Association. Students may apply credits earned in the Payroll Certificate toward an Associate of Applied Business degree in Accounting.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate payroll and related information both verbally and in writing, relative to their knowledge and skill level with internal and external constituents, both inside and outside the field.
2. Work collaboratively, professionally, ethically, and with fiduciary responsibility to process payroll in a manner that is within the appropriate professional code of conduct.
3. Accurately record and apply fundamental accounting processes to properly record routine and nonroutine payroll transactions.
4. Utilize office suite products, including spreadsheets, database, word processing, presentation, and enterprise-wide technology along with proprietary accounting software to record and process payroll transactions.
5. Be prepared to sit for the Fundamental Payroll certification examination presented by the American Payroll Association.

Suggested Semester Sequence

First Semester		Credits
ACCT-1310	Financial Accounting	4
BADM-1020	Introduction to Business	3
BADM-2010	Business Communications … OR	3
BADM-201H	Honors Business Communications	
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
IT-1010	Intro to Microcomputer Applications … OR	3
IT-101H	Honors Intro to Microcomputer Applications	
		16

Second Semester		Credits
ACCT-1030	Payroll	3
ACCT-1041	Individual Taxation	4
ACCT-2520	QuickBooks Immersion	2
ACCT-xxxx	Accounting Elective … OR	2 - 4
BADM-2150	Business Law	
BADM-2330	Human Resource Management	3
		14 - 16
	PROGRAM TOTAL	30 - 32

ELECTIVES		
ACCT-1340	Managerial Accounting	4
ACCT-2041	Business Taxation	4
ACCT-2830	Co-op Experience	2 - 3

ADMINISTRATIVE OFFICE SYSTEMS

Associate of Applied Business Degree in Administrative Office Systems

Students will be prepared for careers in a variety of office settings utilizing the professional applications of word processing, spreadsheets, databases, electronic presentations, and desktop publishing. Students will gain the necessary skills to produce documents, reports, and correspondence while maintaining files electronically by integrating various software applications/functions. Skills acquired will assist students in preparing to take industry certification exams.

Program Admissions Requirements:

- High School Diploma/GED not required, but highly recommended
- Eligibility for ENG-1010
- Eligibility for 1000-level Math course

Other Information
- Certificate available in Basic Office Skills, Office Operations Management, and Virtual Office Assistant.
- Non-degree students may enroll for individual courses, providing they meet the course-specific prerequisites.
- Skills acquired prepare students to take industry certification exams.
- Keyboarding may be waived for students who can demonstrate 25 wpm typing speed by touch (using correct fingering and not looking at the keys) on proficiency exam administered by AOS department. Waiver form must be signed by AOS department.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Work independently and collaboratively to meet the needs of the organization.

2. Exhibit professional and ethical conduct in personal and professional relationships according to office protocol.

3. Communicate verbally and in writing to co-workers, clients and other professionals using appropriate media.

4. Determine and use various office applications software to develop, document, and manage office project, procedures and systems.

5. Organize time and resources to manage day-to-day operations that meet organization guidelines and goals.

Suggested Semester Sequence

First Semester		Credits
BADM-1000	Business Language Skills	2
BADM-1020	Introduction to Business	3
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
IT-1030	Internet Fundamentals	2
IT-1000	Keyboarding [1]	2
		15

ADMINISTRATIVE OFFICE SYSTEMS (Continued)

Second Semester		Credits
AOS-1201	Word Processing I	4
AOS-1220	Speed Building (a) … OR	2
BADM-1121	Principles of Management and Organizational Behavior (b) … OR	4
MA-1020	Medical Terminology I (c) … OR	3
PL-1501	Law Office Technology (d) … OR	2
BADM-1300	Small Business Management (e)	4
AOS-1241	Records Management	3
BADM-2010	Business Communications … OR	3
BADM-201H	Honors Business Communications	
MATH-1xxx	1000-level MATH course or higher	3
		15 - 17

Third Semester		Credits
AOS-1250	Electronic Spreadsheet Use and Design	3
AOS-2200	Word Processing II	3
AOS-2410	Office Management	3
AOS-2210	Presentation Software (a)… OR	3
BADM-1050	Professional Success Strategy (b) … OR	3
MA-2010	Medical Terminology II (c)… OR	2
C&CR-1350	Legal Terminology (d)… OR	3
AOS-2250	Virtual Assistant/Virtual Cyber Office (e)	3
Communication…(See AAB Degree requirements)		3
Arts & Hum (see AAB/AAS degree requirements)		3
		17 - 18

Fourth Semester		Credits
ACCT-xxxx	ACCT elective course	3
AOS-2270	Desktop Publishing … OR (a) (c) (d) (e)	3
BADM-1070	Introduction to Project Management (b)	
AOS-2990	Office Procedures and Practices C	3
Soc and Beh Sci (See AAB/AAS degree requirements)		3
		12
	PROGRAM TOTAL	60 - 62

C = Capstone course.
[1]May be waived for students who can demonstrate 25 wpm typing speed by touch (use correct fingering and do not look at keys) on proficiency exam administered by the IT department. Waiver form must be signed by IT department.

OPTIONS

(a) Administrative Office Specialist)		Credits
Program Total for option A = 60		
AOS 1220	Speed Building	2
AOS 2210	Presentation Software	3
AOS 2270	Desktop Publishing	3

(b) Office Operations Management		Credits
Program Total for Option B = 62		
BADM 1050	Professional Success Strategy	3
BADM 1070	Introduction to Project Management	3
BADM 1121	Principles of Management and Organizational Behavior	4

(c) Medical Administrative Specialist		Credits
Program Total for Option C=60		
AOS 2270	Desktop Publishing	3
MA 1020	Medical Terminology I	3
MA 2010	Medical Terminology II	2

(d) Legal Administrative Specialist		Credits
Program Total for Option D=60		
AOS 2270	Desktop Publishing	3
C&CR 1350	Legal Terminology	3
PL 1501	Law Office Technology	2

(e) Virtual Assistant		Credits
Program Total for Option E=62		
AOS 2250	Virtual Assistant/Virtual Cyber Office	3
AOS 2270	Desktop Publishing	3
BADM 1300	Small Business Management	4

BASIC OFFICE SKILLS
Short-Term Certificate
   The AOS Basic Office Skills Short-Term Certificate prepares students for entry-level employment as alpha-numeric data entry operators, receptionists, and other general office occupations.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Work independently and collaboratively to meet the needs of the organization.

2. Exhibit professional and ethical conduct in personal and professional relationships according to office protocol.

3. Listen, read and provide verbal, written and electronic instructions, direction and procedures; respond appropriately to coworkers, clients and other professionals.

4. Create, input, edit, organize and print various data/business documents accurately and according to business industry standards using available office technology.

5. Apply knowledge of various types of record classification systems using appropriate materials and equipment.

Suggested Semester Sequence

First Semester		Credits
AOS-1241	Records Management	3
IT-1000	Keyboarding *	2
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
IT-1030	Internet Fundamentals	2
IT-1060	Introduction to Windows	2
		12

Second Semester		Credits
AOS-1201	Word Processing I	4
		4
	PROGRAM TOTAL	16

OFFICE OPERATIONS MANAGEMENT
Certificate of Proficiency

The one-year certificate program is designed to accommodate those who are employed full-time or are attending college on a part-time basis, seeking to upgrade their existing employment skills or begin a job in an office setting. The AOS Office Operations Management Certificate of Proficiency prepares individuals to pursue career advancement in the growing field of office management.

Degree: Students may apply credits toward the Administrative Office Systems Degree with an option in Office Operations Management.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Work independently and collaboratively to meet the needs of the organization.

2. Exhibit professional and ethical conduct in personal and professional relationships according to office protocol.

3. Communicate verbally and in writing to co-workers, clients and other professionals using appropriate media.

4. Determine and use various office applications software to develop, document, and manage office project, procedures and systems.

5. Apply knowledge of time, resources, and office management to support effective office operations, guidelines and goals.

Suggested Semester Sequence

First Semester		Credits
BADM-1000	Business Language Skills	2
BADM-1020	Introduction to Business	3
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
IT-1000	Keyboarding [1]	2
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
IT-1030	Internet Fundamentals	2
MATH-1xxx	1000-level MATH course or higher	3
		18

Second Semester		Credits
AOS-1201	Word Processing I	4
AOS-1241	Records Management	3
AOS-1250	Electronic Spreadsheet Use and Design	3
BADM-1121	Principles of Management and Organizational Behavior	4
BADM-2010	Business Communications … OR	3
BADM-201H	Honors Business Communications	
		17
	PROGRAM TOTAL	35

[1] May be waived for students who can demonstrate 25 wpm typing speed on proficiency exam administered by the AOS department. Waiver form must be signed by AOS department.

VIRTUAL OFFICE ASSISTANT
Certificate of Proficiency

Virtual Office Assistant is a program for individuals who are interested in becoming Virtual Assistants (VAs). A virtual assistant is typically an entrepreneur who works from her or his home-office offering administrative and business support services to companies and/or professionals over the Internet.

Minimum two (2) years verifiable secretarial and/or office support work experience. This program is designed for individuals who are working in the field.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Work independently and collaboratively to meet the needs of the organization.

2. Exhibit professional and ethical conduct in personal and professional relationships according to office protocol.

3. Communicate verbally and in writing to co-workers, clients and other professionals using appropriate media.

4. Determine and use various office applications software to develop, document, and manage office projects, procedures and systems.

5. Use entrepreneurial skills to setup and maintain a successful virtual office business.

Suggested Semester Sequence

Summer Semester		Credits
ACCT-1011	Business Math Applications	3
AOS-1250	Electronic Spreadsheet Use and Design	3
BADM-2010	Business Communications … OR	3
BADM-201H	Honors Business Communications	
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
		12

First Semester		Credits
AOS-1241	Records Management	3
AOS-2210	Presentation Software	3
BADM-1070	Introduction to Project Management	3
MATH-1xxx	1000-level MATH course or higher	3
		12

Second Semester		Credits
AOS-2250	Virtual Assistant/Virtual Cyber Office	3
AOS-2270	Desktop Publishing	3
AOS-2990	Office Procedures and Practices	3
		9
	PROGRAM TOTAL	33

APPLIED INDUSTRIAL TECHNOLOGY (Bricklaying & Allied Crafts)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Bricklaying & Allied Crafts

Student must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in Bricklaying Allied Crafts, as well as earn an Associate of Applied Science Degree in Applied Industrial Technology. A three year apprenticeship emphasizes the skill set required of a skilled craftsman. Bricklaying is the art and craft of building and fabricating in stone and brick. Bricklayers work in a variety of construction settings, building chimneys, partitions, and walls, working with stone, cinder and gypsum block, and brick. The work requires physical stamina, a solid mathematical sense, and an artistic eye.

Apprenticeship Coordinator – 216-987-3197

Program Admission Requirements:
- High School Diploma/GED
- Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Listen, ask questions, and follow directions as a member of the crew in order to meet the task at hand.

2. Exhibit pride of craftsmanship, plan/manage personal and professional life, and take opportunities to upgrade skills.

3. Use appropriate personal protective equipment and fall protection to ensure a safe work environment in accordance with the OSHA standards.

4. Apply knowledge of measurements, blueprint reading, materials, techniques, and tools to construct a structure in accordance with the architect and engineer's specifications and design.

Suggested Semester Sequence

First Semester		Credits
ATBL-1300	Basic Bricklaying Trade Skills	2
ATBL-1310	Bricklaying Materials, Tools and Equipment	2
ATBL-1320	Basic Construction Drawings	1
ATBL-1370	Construction Trades Safety	1
ATBL-xxxx	Elective	1
ATBL-xxxx	Elective	2
ENG-1010	College Composition I	3
ENG-101H	Honors College Composition I	3
CNST-1730	Construction Print Reading … OR	2
BADM-xxxx	Business Elective	3
		17 - 18

Second Semester		Credits
ATBL-1330	Wall Construction I	2
ATBL-1340	Arch Construction I	2
ATBL-2120	Mortar Types and Identification	2
ATBL-xxxx	Elective	1
ATBL-xxxx	Elective	2
BADM-xxxx	Business Elective … OR	3 - 4
CNST -xxxx	CNST Elective … OR	
CNST-2330	Construction Scheduling	
MATH-1xxx	1000-level MATH course or higher	3
Communication…(See AAS Degree requirements) [1]		3
		18 - 19

Third Semester		Credits
ATBL-2110	Concrete for Bricklaying	1
ATPT-2340	Blueprints II: Advanced Reading and Estimating	2
ATBL-xxxx	Elective	2
ATBL-xxxx	Elective	2
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
BADM-xxxx	Business Elective … OR	3
CNST-2631	Construction Management Systems … OR	
CNST-xxxx	CNST Elective … OR	
FIN-1061	Personal Finance	
Soc and Beh Sci (See AAB/AAS degree requirements)		3
		16

Fourth Semester		Credits
AIT-2990	Contracting In A Diverse World [C]	3
ATCM-1390	Basic Welding Skills	2
ATBL-2140	Intro to Bricklayer Foreman	1
BADM-xxxx	Business Elective … OR	3
CNST-2990	Construction Estimating & Cost Analysis	
Arts & Hum (see AAB/AAS degree requirements)		3
		12

PROGRAM TOTAL		63 - 65

[1]ENG-2151 Technical Writing highly recommended.

[C] = Capstone course.

ELECTIVES

Construction Engineering Technology Sequence		Credits
Recommended electives in Construction Engineering Technology:		
CNST 1281	Construction Engineering Orientation	3
CNST 1510	Green Building & Sustainability I	3
CNST 1730	Construction Print Reading	2
CNST 2130	Construction Methods, Materials and Equipment	3
CNST 2631	Construction Management Systems	3
CNST 2990	Construction Estimating & Cost Analysis	3

Related Business & Management electives		Credits
Recommended electives in Business & Management:		
BADM 1020	Introduction to Business	3
BADM 1121	Principles of Management and Organizational Behavior	4
BADM 1300	Small Business Management	4
BADM 2150	Business Law	4
BADM 2450	New Business Development	5
BADM 2470	Marketing Techniques for Small Business	3

BRICKLAYING & ALLIED CRAFTS
APPRENTICESHIP PROGRAM
Certificate of Proficiency

   Students must be currently working in a registered apprenticeship program in conjunction with U. S. Department of Labor, Bureau of Apprenticeship and Training. Bricklayers, stone masons and tile setters lay and bind building materials, such as brick, structural tile, concrete block, cinder block, glass block, and terra-cotta block, with mortar and other substances to construct or repair walls, partitions, arches, sewers, and other structures. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the AAS/AIT degree in Bricklayer and Allied Crafts. Student must attain journey level status before certificate is awarded.

Apprenticeship Coordinator – 216-987-3197

Program Admission Requirements:
- High School Diploma/GED
- Participants must be currently working in a registered apprenticeship program in conjunction with the U. S. Department of Labor, Bureau of Apprenticeship & Training.

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Listen, ask questions, and follow directions as a member of the crew in order to meet the task at hand.

2. Exhibit pride of craftsmanship, plan/manage personal and professional life, and take opportunities to upgrade skills.

3. Use appropriate personal protective equipment and fall protection to ensure a safe work environment in accordance with the OSHA standards.

4. Apply knowledge of measurements, blueprint reading, materials, techniques, and tools to construct a structure in accordance with the architect and engineer's specifications and design.

Suggested Semester Sequence

First Semester		Credits
ATBL-1300	Basic Bricklaying Trade Skills	2
ATBL-1310	Bricklaying Materials, Tools and Equipment	2
ATBL-1320	Basic Construction Drawings	1
ATBL-1370	Construction Trades Safety	1
ATCM-1330	Concrete Construction Equipment	2
ATBL-1340	Arch Construction I	2
ATBL-2120	Mortar Types and Identification	2
ATBL-xxxx	Elective	1
ATBL-xxxx	Elective	1
ATBL-xxxx	Elective	2
		16

Second Semester		Credits
ATBL-2110	Concrete for Bricklaying	1
ATPT-2340	Blueprints II: Advanced Reading and Estimating	2
ATCM-1390	Basic Welding Skills	2
ATBL-2140	Intro to Bricklayer Foreman	1
ATBL-xxxx	Elective	1
ATBL-xxxx	Elective	2
		9

Summer Semester		Credits
ATBL-2510	Advanced Brick-Block Construction	2
ATBL-2710	Advanced Bricklaying Skills	3
		5

| | PROGRAM TOTAL | 30 |

APPLIED INDUSTRIAL TECHNOLOGY (Building Construction)
Short-Term Certificate

   The Building Construction Program provides participants the opportunity to complete hands-on projects under the supervision of experienced craft-workers from the Building Construction (Trades) Program. Technical subject matter, applied mathematics, technical reading, blueprint interpretation, safety, health, and physical fitness are reinforced by completion of an extensive array of trade specific assignments. In addition, other employment opportunities are made available through elective courses.

The program courses are offered in a bundled format over multiple terms and in sequence.

Program Coordinator – 216-987-2859

Program Admission Requirements:
- COMPASS eligibility to ENG 0980 or departmental approval.
- COMPASS eligibility to MATH 0950 or ENG-0910 with grade of "C" or higher.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1.   Increase the participant's awareness of career path options in the construction skilled trades.
2.   Inform the participants of the physical, and environmental nature associated with the trades.
3.   Prepare the participant for the construction contractor hiring process including math assessment.
4.   Prepare the participant for physically rigorous nature of construction trades industry.
5.   Inform the participant of the seasonal nature of work, travel and transportation requirements.
6.   Develop or enhance the participant's spatial visualization skills, and mechanical aptitude.
7.   Instruct the participant in construction related mathematical calculations.
8.   Introduce the participant to skilled trades common practices.
9.   Provide the participant an awareness of the benefits offered by merit and union employment
10. Introduce participants to college policies, resources, and best approaches to study, and examination.
11. Introduce participant to principles and practices in sustainability, alternative energy, conservation, recycling, and structural weatherization.

Suggested Semester Sequence

First Semester		Credits
AIT-1040	Spatial and Mechanical Reasoning	1
AIT-1050	Construction Industry Orientation	3
AIT-1060	Construction Tools	2
AIT-1120	Building Construction Trades Lab	3
AIT-xxxx	Elective	1 - 2
AIT-xxxx	Elective	1 - 2
AIT-xxxx	Elective	1 - 2
		12 - 15

| | PROGRAM TOTAL | 12 - 15 |

APPLIED INDUSTRIAL TECHNOLOGY (Carpentry)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Carpentry

   Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. . A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Carpentry is the art and trade of cutting, working, and joining timber. Carpenters work with both structural materials in framing, as well as items such as doors, windows and staircases. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the Associate of Applied Science degree with a concentration in Carpentry.

Apprenticeship Coordinator – 216-987-3295

Program Admission Requirements:
- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.
- High School Diploma/GED
- Intent-to-hire agreement with participating contractor

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally, nonverbally and in writing with the construction team that includes members of other trades, contractor and government agencies.

2. Work independently and in a team environment to accomplish the job in a timely and professional manner.

3. Recognize, analyze and apply critical thinking to resolve issues as they arise, minimize waste and improve productivity.

4. Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor's standards and policies.

5. Exhibit pride of craftsmanship, reliability, commitment to the organization and take opportunities to upgrade skills.

6. Apply basic math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and install various construction tasks that minimize waste.

7. Be certified in OSHA, CPR/First Aid, Scaffold, fall protection and MSDS.

8. Fabricate and install interior/exterior walls, stairs, doors, windows, roof components, flooring and exterior finish in order to build a residential home that meets customer specifications.

9. Fabricate, install and disassemble various concrete forms, frames and systems using appropriate crane and rigging hardware for bridges and commercial building according to customer specifications.

10. Fabricate walls, stairs, ceiling grids and install studs, drywall, ceilings, door, windows to meet a commercial client's specifications.

Suggested Semester Sequence

First Semester		Credits
ATCT-1301	Introduction to Carpentry	2
ATCT-1320	Introduction to Hand and Power Tools	2
ATCT-1351	Metal Studs and Dry Walls	2
ATCT-1381	Wood Framing	2
CNST-1281	Construction Engineering Orientation	3
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MATH-1xxx	1000-level MATH course or higher	3
		17

Second Semester		Credits
ATCT-1310	Carpentry Safety	2
ATCT-1331	Concrete Footers and Walls	2
ATCT-1370	Layout	2
ATCT-2361	Suspended Ceilings	2
ATCT-xxxx	Any ATCT elective course	2
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
Communication…(See AAS Degree requirements)		3
		16

Third Semester		Credits
ATCT-1491	Residential Steel Framing	2
ATCT-1610	Interior Finish	2
ATCT-2341	Concrete Specialties	2
ATCT-2370	Interior Systems Layout	2
CNST-1730	Construction Print Reading	2
Arts & Hum (see AAB/AAS degree requirements)		3
Social & Behavioral Sci (See AAB/AAS degree requirements)		3
		16

Fourth Semester		Credits
AIT-2990	Contracting In A Diverse World [C]	3
ATCT-1390	Welding for Carpentry	2
ATCT-2560	Interior Systems III	2
CNST-1510	Green Building & Sustainability I	3
CNST-2130	Construction Methods, Materials and Equipment	3
		13
	PROGRAM TOTAL	62

ELECTIVES

ATCT Electives		Credits
ATCT-1710	Stairs Layout	2
ATCT-2330	Trade Show	2
ATCT-2500	Exterior Finish	2
ATCT-2511	Concrete Columns and Decks	2
ATCT-2520	Stairs Installation	2
ATCT-2540	Roof Framing III	2

[C] = Capstone course.

CARPENTRY
APPRENTICESHIP PROGRAM
Certificate of Proficiency

   Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. This certificate emphasizes the skill set required to be a highly skilled craftsman. Carpentry is the art and trade of cutting, working, and joining timber. Carpenters work with both structural materials in framing, as well as items such as doors, windows and staircases. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the Associate of Applied Science degree with a concentration in Carpentry.

Apprenticeship Coordinator – 216-987-3295

Program Admission Requirements:
  • Intent-to-hire agreement with participating contractor

Other Information
  • Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally, nonverbally and in writing with the construction team that includes members of other trades, contractor and government agencies.

2. Work independently and in a team environment to accomplish the job in a timely and professional manner.

3. Recognize, analyze and apply critical thinking to resolve issues as they arise, minimize waste and improve productivity.

4. Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor's standards and policies.

5. Exhibit pride of craftsmanship, reliability, commitment to the organization and take opportunities to upgrade skills.

6. Apply basic math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and install various construction tasks that minimize waste.

7. Be certified in OSHA, CPR/First Aid, Scaffold, Fall Protection and MSDS.

8. Fabricate and install interior/exterior walls, stairs, doors, windows, roof components, flooring and exterior finish in order to build a residential home that meets customer specifications.

9. Fabricate, install and disassemble various concrete forms, frames and systems using appropriate crane and rigging hardware for bridges and commercial building according to customer specifications.

10. Fabricate walls, stairs, ceiling grids and install studs, drywall, ceilings, door, windows to meet a commercial client's specifications.

Suggested Semester Sequence

First Semester		Credits
ATCT-1301	Introduction to Carpentry	2
ATCT-1310	Carpentry Safety	2
ATCT-1320	Introduction to Hand and Power Tools	2
ATCT-1351	Metal Studs and Dry Walls	2
ATCT-1381	Wood Framing	2
		10

Second Semester		Credits
ATCT-1331	Concrete Footers and Walls	2
ATCT-1370	Layout	2
ATCT-1390	Welding for Carpentry	2
ATCT-1491	Residential Steel Framing	2
ATCT-1610	Interior Finish	2
ATCT-2361	Suspended Ceilings	2
ATCT-xxxx	Any ATCT elective course	2
		14

Summer Semester		Credits
ATCT-2341	Concrete Specialties	2
ATCT-2370	Interior Systems Layout	2
ATCT-2560	Interior Systems III	2
		6

	PROGRAM TOTAL	30

ELECTIVES
ATCT Electives		Credits
Recommended courses to fulfill the elective requirement:		
ATCT 1710	Stairs Layout	2
ATCT 2330	Trade Show	2
ATCT 2500	Exterior Finish	2
ATCT 2511	Concrete Columns and Decks	2
ATCT 2520	Stairs Installation	2
ATCT 2540	Roof Framing III	2

APPLIED INDUSTRIAL TECHNOLOGY (Cement Masonry)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Cement Masonry

   Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in Cement Masonry, as well as earn an Associate of Applied Science Degree in Applied Industrial Technology. A five-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. An apprentice learns to install, repair, maintain and service finished surfaces of poured concrete, such as floors, walks, sidewalks, roads, or curbs using a variety of hand and power tools. Align forms for sidewalks, curbs, or gutters; patch voids, monitor concrete curing, and use saws to cut expansion joints.

Apprenticeship Coordinator – 216-987-3295

Program Admission Requirements:
- High School Diploma/GED

Other Information:
- Participants must be currently working in a registered apprenticeship program in conjunction with the U. S. Department of Labor, Bureau of Apprenticeship & Training.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1.   Listen, communicate and work with co-workers, supervisor, suppliers and other trades in order to efficiently and timely perform tasks at hand in a team environment according to the Cement Mason Code of Conduct.

2.   Demonstrate pride of craftsmanship.

3.   Recognize and comply with OSHA safety standards and contractor's policies and procedures.

4.   Read job specifications and blueprints to calculate quantity needs and quantity of various types of materials to ensure materials meet job requirements.

5.   Identify and properly use the appropriate tools to set up, place and finish materials in a safe and efficient manner.

6.   Use appropriate construction equipment and tools to move, place and finish materials in a safe and efficient manner.

7.   Commit to and understand the nature of working in the construction trade, especially planning for seasonal work.

8.   Maintain a fitness level to be able to meet the physical demands of the job.

9.   Be certified in OSHA 16.

Suggested Semester Sequence

First Semester		Credits
ATCM-1300	Fundamentals of Concrete Construction	2
ATCM-1310	Applied Technical Communications and Economics	2
ATCM-1320	Basic Plan Reading	2
ATCM-1330	Concrete Construction Equipment	2
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
CNST-xxxx	CNST Elective … OR	3
BADM-xxxx	Business Elective	
MATH-1xxx	1000-level MATH course or higher	3
		17

Second Semester		Credits
ATCM-1340	OSHA Standards for the Construction Industry	3
ATCM-1400	Concrete/Cement Forming and Finishing	3
ATCM-1410	Commercial/Residential Form and Finish Work	4
ATCM-2320	Blueprint Fundamentals Construction	2
BADM-xxxx	Business Elective … OR	3
CNST-1xxx	CNST elective … OR	
FIN-1061	Personal Finance	
		15

Third Semester		Credits
ATCM-2500	Fundamentals of Concrete Curing	1
ATCM-2510	Fundamentals of Concrete Joints	1
ATCM-2520	Basic Cement Patching	2
ATCM-2530	Concrete Restoration	3
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
BADM-xxxx	Business Elective … OR	3
CNST-xxxx	CNST Elective	
Arts & Hum (see AAB/AAS degree requirements)		3
		16

Fourth Semester		Credits
AIT-2990	Contracting In A Diverse World [C]	3
ATCM-2700	Advanced Concrete Finishing	3
BADM-xxxx	Business Elective … OR	3
CNST-xxxx	CNST Elective	
Communication…(See AAS Degree requirements)		3
Soc & Beh Sci/Sciences (see AAB/AAS Degree Requirements)		3
		15

	PROGRAM TOTAL	63

[C] = Capstone course.

ELECTIVES

BADM		Credits
Recommended business electives:		
BADM 1020	Introduction to Business	3
BADM 1121	Principles of Management and Organizational Behavior	4
BADM 1210	Labor-Management Relations	3
BADM 2150	Business Law	4
BADM 2450	New Business Development	5
BADM 2470	Marketing Techniques for Small Business	3

CNST Sequence		Credits
Recommended Construction Management electives:		
CNST 1281	Construction Engineering Orientation	3
CNST 1510	Green Building & Sustainability I	3
CNST 1730	Construction Print Reading	2
CNST 2130	Construction Methods, Materials and Equipment	3

CEMENT MASONRY
APPRENTICESHIP PROGRAM
Certificate of Proficiency
   Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in Cement Masonry, as well as earn an Associate Degree in Applied Industrial Technology. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. A five year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. An apprentice learns to install, repair, maintain and service finished surfaces of poured concrete, such as floors, walks, sidewalks, roads, or curbs using a variety of hand and power tools. Align forms for sidewalks, curbs, or gutters; patch voids, monitor concrete curing, and use saws to cut expansion joints.

Apprenticeship Coordinator – 216-987-3295

Program Admission Requirements:
- High School Diploma/GED

Other Information:
- Participants must be currently working in a registered apprenticeship program in conjunction with the U. S. Department of Labor, Bureau of Apprenticeship & Training.

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Listen, communicate and work with co-workers, supervisor, suppliers and other trades in order to efficiently and timely perform tasks at hand in a team environment according to the Cement Mason Code of Conduct.

2. Demonstrate pride of craftsmanship.

3. Recognize and comply with OSHA safety standards and contractor's policies and procedures.

4. Read job specifications and blueprints to calculate quantity needs and quantity of various types of materials to ensure materials meet job requirements.

5. Identify and properly use the appropriate tools to set up, place and finish materials in a safe and efficient manner.

6. Use appropriate construction equipment and tools to move, place and finish materials in a safe and efficient manner.

7. Commit to and understand the nature of working in the construction trade, especially planning for seasonal work.

8. Maintain a fitness level to be able to meet the physical demands of the job.

9. Be certified in OSHA 16.

Suggested Semester Sequence

First Semester		Credits
ATCM-1300	Fundamentals of Concrete Construction	2
ATCM-1310	Applied Technical Communications and Economics	2
ATCM-1320	Basic Plan Reading	2
ATCM-1330	Concrete Construction Equipment	2
ATCM-1340	OSHA Standards for the Construction Industry	3
ATCM-1400	Concrete/Cement Forming and Finishing	3
		14

Second Semester		Credits
ATCM-1410	Commercial/Residential Form and Finish Work	4
ATCM-2320	Blueprint Fundamentals-Construction	2
ATCM-2500	Fundamentals of Concrete Curing	1
ATCM-2510	Fundamentals of Concrete Joints	1
ATCM-2520	Basic Cement Patching	2
ATCM-2530	Concrete Restoration	3
		13

Summer Semester		Credits
ATCM-2700	Advanced Concrete Finishing	3
		6
	PROGRAM TOTAL	30

APPLIED INDUSTRIAL TECHNOLOGY (Communication Transport Systems)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Communication Transport Systems

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in Communication Transport Systems, as well as earn an Associate of Applied Science Degree in Applied Industrial Technology. A four year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Trade specifics include low voltage wiring, wireless communication transport system and other transmission mediums including fiberglass.

Apprenticeship Coordinator – 216-987-3295

Program Admission Requirements:
- Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A four year apprenticeship emphasizes the skill set required to be a highly skilled craftsperson.
- High school Diploma/GED
- 18 years old

Other Information:
- Valid driver's license; 18 years old

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use active listening and communication skills to ensure that the work is being performed correctly and efficiently.

2. Communicate the scope of their work with crew members, general contractors, and end users.

3. Work independently and as a member of a crew that is focused on a common goal within your scope of authority.

4. Work in accordance with the communication workers of America's (CWA) Code of Ethics.

5. Use appropriate personal protective equipment, tools and work safely in accordance with OSHA, employer and customer safety protocols, and policies.

6. Apply basic math and electrical knowledge to transport cabling systems in an efficient manner following industry standards and safe work practices.

7. Apply math, electrical and mechanical knowledge and interpret prints to install, terminate, test and commission basic copper and fiber transport systems using best practices, industry standards, and safe work practices.

8. Apply math, electrical, mechanical, equipment and advanced copper and fiber knowledge to install, test, commission, and service end user equipment and systems using best practices, industry standards and safe work practices.

9. Plan, lead and manage the implementation of the scope of work to complete the project to the end users' satisfaction.

Suggested Semester Sequence

First Semester		Credits
ATCW-1010	Worker Safety for Communication Transport	2
ATCW-1020	Communication Worker History	2
ATCW-1040	Basic Information Systems	2
ATCW-xxxx	elective	1
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MATH-1280	Advanced Intermediate Algebra or higher	5
		15

Second Semester		Credits
ATCW-1210	Introduction to Information Transport -Copper	2
ATCW-xxxx	elective	2
ATCW-xxxx	elective	2
BADM-xxxx	Business Elective … OR	3
EET-xxxx	EET elective course … OR	
CNST-xxxx	CNST Elective	
BADM-xxxx	Business Elective … OR	3
CNST-xxxx	CNST Elective … OR	
EET-xxxx	EET elective course	
EET-1140	Productivity Tools for Engineering	2
EET-1160	Direct Current Circuits I	2
		16

Third Semester		Credits
ATCW-1250	Infrastructure Layout	2
ATCW-1270	Grounding and Bonding	1
ATCW-2010	Information Transport-Fiber	2
ATCW-2050	Audio Visual	1
ATCW-xxxx	elective	1
ATCW-xxxx	elective	1
BADM-xxxx	Business Elective … OR	3
CNST-xxxx	CNST Elective … OR	
EET-xxxx	EET elective course	
Soc & Beh Sci/Nat Sci (see AAB/AAS Degree Requirements)		3
		14

Fourth Semester		Credits
ATCW-2070	Information Transport Circuits	1
ATCW-2120	Advanced Systems Transport	2
AIT-2990	Contracting In A Diverse World	3
BADM-xxxx	Business Elective … OR	3
EET-xxxx	EET elective course	
Arts & Hum (see AAB/AAS degree requirements)		3
Communication...(See AAS Degree requirements)		3
		15

	PROGRAM TOTAL	60

C = Capstone course.

EET-1140	Productivity Tools for Engineering	2
EET-1160	Direct Current Circuits I	2
		14

Summer Semester		Credits
ATCW-2070	Information Transport Circuits	1
ATCW-2120	Advanced Systems Transport	2
		3
	PROGRAM TOTAL	30

COMMUNICATION TRANSPORT SYSTEMS

APPRENTICESHIP PROGRAM
Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. A four year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Trade specifics include low voltage wiring, wireless communication transport system and other transmission mediums including fiberglass.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use active listening and communication skills to ensure that the work is being performed correctly and efficiently.

2. Communicate the scope of their work with crew members, general contractors, and end users.

3. Work independently and as a member of a crew that is focused on a common goal within your scope of authority.

4. Work in accordance with the communication workers of America's (CWA) Code of Ethics.

5. Use appropriate personal protective equipment, tools and work safely in accordance with OSHA, employer and customer safety protocols, and policies.

6. Apply basic math and electrical knowledge to transport cabling systems in an efficient manner following industry standards and safe work practices.

7. Apply math, electrical and mechanical knowledge and interpret prints to install, terminate, test and commission basic copper and fiber transport systems using best practices, industry standards, and safe work practices.

8. Apply math, electrical, mechanical, equipment and advanced copper and fiber knowledge to install, test, commission, and service end user equipment and systems using best practices, industry standards and safe work practices.

9. Plan, lead and manage the implementation of the scope of work to complete the project to the end users' satisfaction.

Suggested Semester Sequence

First Semester		Credits
ATCW-1010	Worker Safety for Communication Transport	2
ATCW-1020	Communication Worker History	2
ATCW-1040	Basic Information Systems	2
ATCW-1210	Introduction to Information Transport -Copper	2
ATCW-xxxx	elective	2
ATCW-xxxx	elective	1
ATCW-xxxx	elective	2
		13

Second Semester		Credits
ATCW-1250	Infrastructure Layout	2
ATCW-1270	Grounding and Bonding	1
ATCW-2010	Information Transport-Fiber	2
ATCW-2050	Audio Visual	1
ATCW-xxxx	elective	2
ATCW-xxxx	elective	2

APPLIED INDUSTRIAL TECHNOLOGY (Construction Tending and Hazardous Material Abatement)

APPRENTICESHIP PROGRAM
Associate of Applied Science degree in Industrial Technology with a concentration in Construction Tending and Hazardous Materials Abatement

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in Construction Tending and Hazardous Materials Abatement, as well as earn an Associate of Applied Science Degree in Applied Industrial Technology. A three year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. These apprentices assist other trades on the job site as well as prepare the job site by removing any hazardous materials.

Apprenticeship Coordinator – 216-987-3295

Program Admission Requirements:
- Aptitude test
- High School Diploma/GED

Other Information:
- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training
- Applicants are reviewed and selected by committee for admission to the program

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Listen, ask questions, confirm understanding and use hand signals when needed to communicate and follow directions to be able to safely complete a job.

2. Work independently and in a team environment to accomplish the job in a timely and professional manner.

3. Exhibit pride of craftsmanship and reliability; actively engage in all aspects of the project and take opportunities to upgrade skills.

4. Recognize hazardous conditions and materials, wear appropriate personal protective equipment and take preventative measures following federal, state, and local policies and procedures.

APPLIED INDUSTRIAL TECHNOLOGY (Construction Tending And Hazardous Material Abatement) (Continued)

5. Commit to and understand the seasonal, physical and hazardous nature of the construction industry and maintain a fitness level to be able to meet the physical requirements of the Construction Craft laborer profession.

6. Prepare the job site, assist with job site layout and perform final clean up according to established industry standards prior to transfer of the project to the owner.

7. Read job specifications and blueprints; use appropriate math to calculate the material needs of the skilled crafts being tended; schedule and properly place materials in a proactive and timely manner.

8. Use OSHA required personal protective equipment, techniques and procedures to abate and secure hazardous materials (i.e. asbestos, lead, hazardous waste).

9. Be certified in OSHA Confined Space Entry, fall protection, asbestos, scaffold user, lead, all terrain forklift, skid-steer loader, hazardous materials and OSHA 10.

Suggested Semester Sequence

First Semester		Credits
ATLB-1010	Craft Orientation for Laborers	1
ATLB-1020	Measurements and Leveling	2
ATLB-1210	Concrete Placement	2
ATLB-1340	Mason Tending	3
ATLB-xxxx	Laborer Elective	2
ATLB-xxxx	Laborer Elective	1
ENG-1010	College Composition I …OR	3
ENG-101H	Honors College Composition I	
MATH-1xxx	1000-level MATH course or higher	3
		17

Second Semester		Credits
ATLB-2650	Demolition Techniques	3
ATLB-xxxx	Laborer Elective	2
ATLB-xxxx	Laborer Elective	2
ATLB-xxxx	Laborer Elective	3
CNST-xxxx	CNST Elective…OR	3
BADM-xxxx	Business Elective…OR	
FIN-1061	Personal Finance	
IT-1010	Introduction to Microcomputer Applications …OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
		16

Third Semester		Credits
ATLB-2110	Small Engines and Concrete Saws	2
ATLB-2120	Pneumatic Tools and Carpenter Tending	2
ATLB-xxxx	Laborer Elective	2
ATLB-xxxx	Laborer Elective	2
BADM-xxxx	Business Elective …OR	3
CNST-1xxx	CNST elective	
Communication...(See AAS Degree requirements)		3
		14

Fourth Semester		Credits
AIT-2990	Contracting In A Diverse World [C]	3
BADM-xxxx	Business Elective ….OR	3
CNST-1xxx	CNST elective	
BADM-xxxx	Business Elective ….OR	3
CNST-2130	Construction Methods, Materials and Equipment	
Arts & Hum (see AAB/AAS degree requirements)		3
Soc & Beh Sci (see AAB/AAS degree requirements)		3
		15

	PROGRAM TOTAL	62

[C] = Capstone course.

ELECTIVES

Construction Management Electives		Credits
Select from following courses to fulfill CNST elective credits:		
CNST-1281	Construction Engineering Orientation	3
CNST-1510	Green Building & Sustainability I	3
CNST-1730	Construction Print Reading	2
CNST-2330	Construction Scheduling	3
CNST-2631	Construction Management Systems	3

Business Electives		Credits
Select from the following courses for business electives:		
BADM-1020	Introduction to Business	3
BADM-1121	Principles of Management & Organizational Behavior	4
BADM-1210	Labor-Management Relations	3
BADM-2220	Organizational Behavior	3

CONSTRUCTION TENDING AND HAZARDOUS MATERIAL ABATEMENT

APPRENTICESHIP PROGRAM

Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A three year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. These apprentices assist other trades on the job site as well as prepare the job site by removing any hazardous materials. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the Associate of Applied Science degree with a concentration in Construction Tending and Hazardous Material Abatement.

Apprenticeship Coordinator – 216-987-3295

Program Admission Requirements:
- Aptitude test

Other Information:
- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training
- Applicants are reviewed and selected by committee for admission to the program

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Listen, ask questions, confirm understanding and use hand signals when needed to communicate and follow directions to be able to safely complete a job.

2. Work independently and in a team environment to accomplish the job in a timely and professional manner.

3. Exhibit pride of craftsmanship and reliability; actively engage in all aspects of the project and take opportunities to upgrade skills.

4. Recognize hazardous conditions and materials, wear appropriate personal protective equipment and take preventative measures following federal, state, and local policies and procedures.

5. Commit to and understand the seasonal, physical and hazardous nature of the construction industry and maintain a fitness level to be able to meet the physical requirements of the Construction Craft laborer profession.

6. Prepare the job site, assist with job site layout and perform final clean up according to established industry standards prior to transfer of the project to the owner.

7. Read job specifications and blueprints; use appropriate math to calculate the material needs of the skilled crafts being tended; schedule and properly place materials in a proactive and timely manner.

8. Use OSHA required personal protective equipment, techniques and procedures to abate and secure hazardous materials (i.e. asbestos, lead, hazardous waste).

9. Be certified in OSHA Confined Space Entry, fall protection, asbestos, scaffold user, lead, all terrain forklift, skid-steer loader, hazardous materials and OSHA 10.

Suggested Semester Sequence

First Semester		Credits
ATLB-1010	Craft Orientation for Laborers	1
ATLB-1020	Measurements and Leveling	2
ATLB-1210	Concrete Placement	2
ATLB-1340	Mason Tending	3
ATLB-xxxx	Laborer Elective	2
ATLB-xxxx	Laborer Elective	1
ATLB-xxxx	Laborer Elective	2
		13

Second Semester		Credits
ATLB-2650	Demolition Techniques	3
ATLB-xxxx	Laborer Elective	2
ATLB-xxxx	Laborer Elective	2
ATLB-xxxx	Laborer Elective	2
		9

Summer Semester		Credits
ATLB-2110	Small Engines and Concrete Saws	2
ATLB-2120	Pneumatic Tools and Carpenter Tending	2
ATLB-xxxx	Laborer Elective	2
ATLB-xxxx	Laborer Elective	2
		8

	PROGRAM TOTAL	30

APPLIED INDUSTRIAL TECHNOLOGY (Drywall Finishing)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Drywall Finishing

   Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to work as a journey-level Drywall Finisher, as well as earn an Associate of Applied Science Degree. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. The Drywall Finisher finishes drywall surfaces by applying materials and sanding in preparation for final painting or treatment.

Apprenticeship Coordinator – 216-987-3197

Program Admission Requirements:
- High School Diploma/GED
- Intent-to-hire agreement with participating contractor

Other Information:

- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply basic math concepts to accurately determine material and labor needs for a specific task.

2. Apply fundamentals of workplace health and safety related to the construction site commensurate with state, federal, local, contractor's and customer's standards and policies.

3. Identify and resolve unexpected issues that impede successful and timely completion of a specified task.

4. Demonstrate effective listening, verbal, written, and conflict management skills to communicate accurately and respectfully with co-workers and customers.

5. Apply finishing trade skills, techniques, and philosophies to complete the assigned task in an efficient, timely and professional manner.

6. Use hand, spray, and automated trade related tools and materials (mud, tape, mesh) effectively to complete job with minimum waste, using health and safety standards.

7. Use blueprints to verify materials and equipment needs to complete the job in a timely manner.

Suggested Semester Sequence

First Semester		Credits
ATDW-1310	Tools and Methods of Drywall Finishing	2
ATDW-1330	Materials and Methods of Drywall Finishing	2
ATPT-1300	Introduction to Painting, Drywall Finishing and Glazing	2
ATPT-1320	Safety Standards for Construction (OSHA-10)	3
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	

BADM-xxxx	Business Elective … OR	3
CNST-xxxx	CNST Elective	
MATH-1xxx	1000-level MATH course or higher	3
		18

Second Semester		Credits
ATDW-1620	Taping Tools and Procedures	2
ATPT-1340	Wall Preparation and Repair	2
ATPT-1650	Blueprints I: Construction Fundamentals	2
ATPT-1660	Labor in American Society	2
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
BADM-xxxx	Business Elective … OR	3
CNST-1281	Construction Engineering Orientation … OR	
CNST-1510	Green Building & Sustainability I	
Communication…(See AAS Degree requirements) [1]		3
		17

Third Semester		Credits
ATDW-2310	Automatic Taping Tools	2
ATDW-2330	Finishing Boxes	2
ATDW-2350	Filling Compounds and Procedures	2
ATPT-2320	Safe Work Practices	3
BADM-xxxx	Business Elective … OR	2-3
CNST-1730	Construction Print Reading	
Arts & Hum (see AAB/AAS degree requirements)		3
		14 - 15

Fourth Semester		Credits
ATDW-2340	Texturing	2
ATPT-2340	Blueprints II: Advanced Reading and Estimating	2
ATPT-2360	Foreman Training	2
ATPT-xxxx	ATPT elective course	2
AIT-2990	Contracting In A Diverse World	3
BADM-xxxx	Business Elective … OR	3
CNST-xxxx	CNST Elective	
Soc & Beh Sci/Sciences (see AAB/AAS Degree Requirements)		3
		17

	PROGRAM TOTAL	66 - 67

ELECTIVES

Technical Electives		Credits
ATPT-1330	Filling Compounds and Procedures	2
ATPT-1620	Wood Finishing	2
ATPT-1630	Color Mixing and Matching	2
ATPT-2310	Wallcovering and Paperhanging	3
ATPT-2380	Special Coatings and Decorative Finishes	2

Business & Supervision Electives		Credits
BADM 1020	Introduction to Business	3
BADM 1121	Principles of Management and Organizational Behavior	4
BADM 1210	Labor-Management Relations	3
BADM 1300	Small Business Management	4
BADM 2150	Business Law	4
BADM 2450	New Business Development	5

[1]ENG-2151 Technical Writing highly recommended.

C = Capstone course.

DRYWALL FINISHING

APPRENTICESHIP PROGRAM

Certificate of Proficiency

   Student must be currently working in a registered apprenticeship in conjunction with the U. S. Dept. of Labor, Bureau of Apprenticeship Training, and a partnering Joint Apprenticeship Training Committee. The three year apprenticeship emphasizes the technical skills of a craft worker. Drywall Finishing is the art and craft of applying plasterboard or other wallboard to ceilings or interior walls of buildings, working with decorative quality and include lathers who fasten wooden, metal, or rock board lath to walls, ceilings or partitions of buildings to provide support base for plaster, fire-proofing, or acoustical material.

The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the Associate of Applied Science degree with a concentration in Drywall Finishing.

Apprenticeship Coordinator – 216-987-3197

Program Admission Requirements:

- Participants must be currently working in a registered apprenticeship in conjunction with the U. S. Dept. of Labor, Bureau of Apprenticeship & Training, and a partnering Joint Apprenticeship Training Committee

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply basic math concepts to accurately determine material and labor needs for a specific task.

2. Apply fundamentals of workplace health and safety related to the construction site commensurate with state, federal, local, contractor's and customer's standards and policies.

3. Identify and resolve unexpected issues that impede successful and timely completion of a specified task.

4. Demonstrate effective listening, verbal, written, and conflict management skills to communicate accurately and respectfully with co-workers and customers.

5. Apply finishing trade skills, techniques, and philosophies to complete the assigned task in an efficient, timely and professional manner.

6. Use hand, spray, and automated trade related tools and materials (mud, tape, mesh) effectively to complete job with minimum waste, using health and safety standards.

7. Use blueprints to verify materials and equipment needs to complete the job in a timely manner.

Suggested Semester Sequence

First Semester		Credits
ATDW-1310	Tools and Methods of Drywall Finishing	2
ATDW-1620	Taping Tools and Procedures	2
ATEL-1330	National Electric Code	2
ATPT-1300	Introduction to Painting, Drywall Finishing and Glazing	2
ATPT-1320	Safety Standards for Construction (OSHA-10)	3
ATPT-1340	Wall Preparation and Repair	2
		13

Second Semester		Credits
ATDW-2310	Automatic Taping Tools	2
ATDW-2330	Finishing Boxes	2
ATDW-2350	Filling Compounds and Procedures	2
ATPT-1650	Blueprints I: Construction Fundamentals	2
ATPT-1660	Labor in American Society	2
ATPT-2320	Safe Work Practices	3
		13

Summer Semester		Credits
ATDW-2340	Texturing	2
ATPT-2340	Blueprints II: Advanced Reading and Estimating	2
ATPT-2360	Foreman Training	2
		6
	PROGRAM TOTAL	32

APPLIED INDUSTRIAL TECHNOLOGY (Electrical Construction)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Electrical Construction

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in Electrical Construction, as well as earn an Associate of Applied Science Degree. A five year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. The Electrician installs, maintains, operates, or repairs electrical equipment. The work of the electrical construction worker can be divided into broad categories such as new construction, remodeling, maintenance, and repair. While the jobs differ, the mental and physical skills acquired in this well-designed and administered apprenticeship training program prepare the electrical worker for the entire range of work. Much of the work involves installation, assembling, testing, repairing, layout and design of electrical wiring, fixtures, and apparatus used for power, light, heating, air conditioning and many types of control systems. Many jobs now incorporate computers and fiber optics.

Apprenticeship Coordinator – 216-987-3197

Program Admission Requirements:
- High School Diploma/GED
- One year of high school Algebra or one college level Algebra class
- Electrician's English Comprehension and Mathematics Tests

Other Information:
- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.
- Applicants are reviewed and selected by committee for admission to the program

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Plan, organize, and coordinate with electrical team and other trades to resolve conflict and ensure the job runs efficiently.

2. Use active listening and communication skills to ensure that the work is being performed correctly and efficiently.

3. Work safely according to OSHA, NFPA, Standards, contractor and customer safety protocols and policies.

4. Work in accordance with IBEW/NECA Code of Excellence.

5. Apply knowledge of math, basic electrical theory, blueprints, and tools to install basic wiring system that meets industry codes and standards.

6. Apply knowledge of technical math, motor control, AC theory, raceway systems, and transformers to install, test, and repair advance wiring systems according to the National Electrical Code and other applicable industry standards.

Suggested Semester Sequence

First Semester		Credits
ATEL-1300	Direct Current Fundamentals	3
ATEL-1330	National Electric Code	2
ATEL-1350	Industrial Safety	1
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
CNST-1730	Construction Print Reading … OR	2-3
FIN-1061	Personal Finance … OR	
BADM-xxxx	Business Elective	
MATH-1270	Intermediate Algebra or higher[1]	4
		15 - 16

Second Semester		Credits
ATEL-1310	Alternating Current Fundamentals	3
ATEL-1360	Blueprint Fundamentals - Electrical	2
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications … OR	
IT-xxxx	Information Technology elective	
Communication…(See AAS Degree requirements) [2]		3
Social and Beh Sci (See AAB/AAS degree requirements)		3
		14

Third Semester		Credits
ATEL-2300	Industrial Electronics Fundamentals I	3
ATEL-2310	Industrial Electronics Fundamentals II	3
ATEL-2350	Programmable Logic Controllers	3
CNST-2130	Construction Methods, Materials and Equipment … OR	3
BADM-xxxx	Business Elective	
CNST-2990	Construction Estimating & Cost Analysis … OR	3
BADM-xxxx	Business Elective	
Arts & Hum Requirement (see AAB/AAS degree requirements)		3
		18

Fourth Semester		Credits
AIT-2990	Contracting In A Diverse World [C]	3
ATEL-2500	AC/DC Motors and Generators	4
ATEL-2510	Motor Controls	3
ATEL-2700	Electrical Instrumentation	4
CNST-2631	Construction Management Systems … OR	3
BADM-xxxx	Business Elective	
		17
	PROGRAM TOTAL	64 - 65

ELECTIVES

Business electives		Credits
BADM-1020	Introduction to Business	3
BADM-1121	Principles of Management & Organizational Behavior	4
BADM-1300	Small Business Management	4
BADM-2150	Business Law	4
BADM-2450	New Business Development	5
BADM-2470	Marketing Techniques for Small Business	3

[1]MATH-1800-1820 may not be used to meet this requirement.
[2]ENG-2151 Technical Writing highly recommended.
[C] = Capstone course.

ELECTRICAL CONSTRUCTION
APPRENTICESHIP PROGRAM
Certificate of Proficiency

  Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A five year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. The Electrician installs, maintains, operates, or repairs electrical equipment. The work of the electrical construction worker can be divided into broad categories such as new construction, remodeling, maintenance, and repair. While the jobs differ, the mental and physical skills acquired in this well-designed and administered apprenticeship training program prepare the electrical worker for the entire range of work. Much of the work involves installation, assembling, testing, repairing, layout and design of electrical wiring, fixtures, and apparatus used for power, light, heating, air conditioning and many types of control systems. Many jobs now incorporate computers and fiber optics. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the Associate of Applied Science degree with a concentration in Electrical Construction.

Apprenticeship Coordinator – 216-987-3197

Program Admission Requirements:
- High School Diploma/GED
- One year of high school Algebra or one college level Algebra class
- Electrician's English Comprehension and Mathematics Tests

Other Information:
- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.
- Applicants are reviewed and selected by committee for admission to the program.

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Plan, organize, and coordinate with electrical team and other trades to resolve conflict and ensure the job runs efficiently.

2. Use active listening and communication skills to ensure that the work is being performed correctly and efficiently.

3. Work safely according to OSHA, NFPA, Standards, contractor and customer safety protocols and policies.

4. Work in accordance with IBEW/NECA Code of Excellence.

5. Apply knowledge of math, basic electrical theory, blueprints, and tools to install basic wiring system that meets industry codes and standards.

6. Apply knowledge of technical math, motor control, AC theory, raceway systems, and transformers to install, test, and repair advance wiring systems according to the National Electrical Code and other applicable industry standards.

Suggested Semester Sequence

First Semester		Credits
ATEL-1300	Direct Current Fundamentals	3
ATEL-1310	Alternating Current Fundamentals	3
ATEL-1330	National Electric Code	2
ATEL-1350	Industrial Safety	1
ATEL-1360	Blueprint Fundamentals - Electrical	2
		11

Second Semester		Credits
ATEL-2300	Industrial Electronics Fundamentals I	3
ATEL-2310	Industrial Electronics Fundamentals II	3
ATEL-2350	Programmable Logic Controllers	3
ATEL-2500	AC/DC Motors and Generators	4
		13

Summer Semester		Credits
ATEL-2510	Motor Controls	3
ATEL-2700	Electrical Instrumentation	4
		7

	PROGRAM TOTAL	31

APPLIED INDUSTRIAL TECHNOLOGY (Floorlaying)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Floorlaying

  Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to work as a journey-level Floorlayer, as well as earn an Associate of Applied Science Degree. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. The Floorlayer cuts, fits and installs hardwood flooring and various types of underlayment to insure smooth, level surfaces for a finished floor; scribes, cuts, fits, layout and seams tile and sheet goods. Also is an expert at cutting, binding, sewing and installing carpet.

Apprenticeship Coordinator – 216-987-3295

Program Admission Requirements:

- Intent-to-hire agreement with participating contractor

Other Information:

- An apprenticeship is a full-time commitment in which the apprentices work most of the time in the industry and attend classes on regular intervals to learn new skills.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Read and interpret blueprints, specifications, and finish schedule to complete the floor correctly.

2. Conduct tests to verify potential moisture and alkalinity in the floor to ensure it is ready to accept material to be installed.

3. Assess substrate for imperfections (bumps, lumps, holes, saw joints, etc.) to determine and perform required floor preparations to ensure a smooth and flat installation.

4. Inspect required materials for flaws and install properly using appropriate tools and techniques in accordance with job and layout specifications.

5. Inspect equipment to ensure safe working order and conduct all work in accordance with federal, state, and local regulations, and jobsite and contractor safety policies and procedures.

6. Verbally communicate, negotiate, and resolve jobsite issues with project manager, contractor, superintendent, architect, journeymen, and other craftsmen to plan and execute the job.

7. Work independently and in a team environment to accomplish the job in a timely and professional manner.

8. Sit for the install certification.

Suggested Semester Sequence

First Semester		Credits
ATCT-1301	Introduction to Carpentry	2
ATFL-1450	Floorlaying Concepts [1]	2
ATFL-1600	Modular Tile [1]	2
ATFL-1610	Jute and Action Back Carpeting [1]	2
ATFL-1620	Ceramics I	2
ENG-1010	College Composition I … OR	
ENG-101H	Honors College Composition I	3
IT-1010	Introduction to Microcomputer Applications … OR	
IT-101H	Honors Introduction to Microcomputer Applications	3
		16

Second Semester		Credits
ATFL-1630	Wood Flooring I	2
ATFL-1640	Sheet Goods Concepts	2
ATFL-1650	Sheet Goods - Flash Coving	2
ATFL-1720	Sheet Goods - Geometric Layout and Inlay	2
ATFL-1730	Unitary Back and Enhancer Back Carpeting	2
CNST-1730	Construction Print Reading	2
MATH-1xxx	1000-level MATH course or higher	3
		15

Third Semester		Credits
ATFL-1300	ATFL Residential Installation Procedures	2
ATFL-xxxx	Floorlaying elective	2
CNST-2130	Construction Methods, Materials and Equipment	3
Arts & Hum (see AAB/AAS degree requirements)		3
Communication...(See AAS Degree requirements)		3
		13

Fourth Semester		Credits
AIT-2990	Contracting In A Diverse World [C]	3
ATFL-2300	Ceramics II	2
ATFL-2400	Sheet Goods - Specialty Products	2
CNST-2631	Construction Management Systems	3
CNST-2990	Construction Estimating & Cost Analysis	3
Social and Beh Sci (See AAB/AAS degree requirements)		3
		16

  PROGRAM TOTAL 60

[1] Consecutively scheduled courses.

[C] = Capstone course.

FLOORLAYING
APPRENTICESHIP PROGRAM
Certificate of Proficiency

  Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. The Floorlayer cuts, fits and installs hardwood flooring and various types of underlayment to insure smooth, level surfaces for a finished floor, scribes, cuts, fits, layout and seam tile and sheet goods. Also is an expert at cutting, binding, sewing and installing carpet. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the Associate of Applied Science degree with a concentration in Floorlaying.

Apprenticeship Coordinator – 216-987-3295

Program Admission Requirements:
- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training
- Intent-to-hire agreement with participating contractor

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Read and interpret blueprints, specifications, and finish schedule to complete the floor correctly.

2. Conduct tests to verify potential moisture and alkalinity in the floor to ensure it is ready to accept material to be installed.

3. Assess substrate for imperfections (bumps, lumps, holes, saw joints, etc.) to determine and perform required floor preparations to ensure a smooth and flat installation.

4. Inspect required materials for flaws and install properly using appropriate tools and techniques in accordance with job and layout specifications.

5. Inspect equipment to ensure safe working order and conduct all work in accordance with federal, state, and local regulations, and jobsite and contractor safety policies and procedures.

6. Verbally communicate, negotiate, and resolve jobsite issues with project manager, contractor, superintendent, architect, journeymen, and other craftsmen to plan and execute the job.

7. Work independently and in a team environment to accomplish the job in a timely and professional manner.

8. Sit for the install certification.

Suggested Semester Sequence

First Semester		Credits
ATCT-1301	Introduction to Carpentry	2
ATFL-1450	Floorlaying Concepts	2
ATFL-1630	Wood Flooring I	2
ATFL-1640	Sheet Goods Concepts	2
ATFL-xxxx	Floorlaying elective	2
		10

Second Semester		Credits
ATFL-1300	ATFL Residential Installation Procedures	2
ATFL-1600	Modular Tile	2
ATFL-1610	Jute and Action Back Carpeting	2
ATFL-1620	Ceramics I	2
ATFL-1650	Sheet Goods - Flash Coving	2
ATFL-1720	Sheet Goods - Geometric Layout and Inlay	2
ATFL-1730	Unitary Back and Enhancer Back Carpeting	2
		14

Summer Semester		Credits
ATFL-2300	Ceramics II	2
ATFL-2400	Sheet Goods - Specialty Products	2
ATFL-xxxx	Floorlaying elective	2
		6

	PROGRAM TOTAL	30

APPLIED INDUSTRIAL TECHNOLOGY (Glazing)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Glazing

   Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to work as a journey-level Glazier, as well as earn an Associate of Applied Science degree in Applied Industrial Technology. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. The Glazier cuts and installs all types of glass. Materials include clear and heat absorbing glass, obscure glass, mirrors, leaded glass panels and insulating glass. The glazier also fabricates aluminum entrances, sidelights and show windows, and works with plastic and porcelain panels in metal and wood frames.

Apprenticeship Coordinator – 216-987-3197

Program Admission Requirements:
- High School Diploma or GED required.
- Aptitude Test – contact program coordinator for information
- Intent-to-hire agreement with participating contractor

Other Information:
- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply basic math concepts to accurately determine material and labor needs for a specific task.

2. Apply fundamentals of workplace health and safety related to the construction site commensurate with state, federal, local, contractor's and customer's standards and policies.

3. Identify and resolve unexpected issues that impede successful and timely completion of a specified task.

4. Demonstrate effective listening, verbal, written, and conflict management skills to communicate accurately and respectfully with co-workers and customers.

5. Apply finishing trade skills, techniques, and philosophies to complete the assigned task in an efficient, timely and professional manner.

6. Interpret drawings and use principles of glass, layout techniques, math, materials, tools and equipment to properly fabricate, assemble, and install all types of glass window and door systems.

7. Sit for welding certification as it relates to the glazing industry.

Suggested Semester Sequence

First Semester		Credits
ATGL-1330	Hand Tools for Glaziers	2
ATPT-1300	Introduction to Painting, Drywall Finishing and Glazing	2
ATPT-1320	Safety Standards for Construction (OSHA-10)	3
BADM-xxxx	Business Elective … OR	2-3
CNST-1xxx	CNST elective … OR	
CNST-1730	Construction Print Reading … OR	
FIN-1061	Personal Finance	
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MATH-1xxx	1000-level MATH course or higher	3
		15 - 16

Second Semester		Credits
ATGL-1620	Glass and Mirror Replacement and Installation	2
ATGL-1630	Basic Welding	2
ATGL-1640	Door Fabrication and Installation	2
ATPT-1650	Blueprints I: Construction Fundamentals	2
BADM-xxxx	Business Elective … OR	3
CNST-1xxx	CNST elective … OR	
CNST-2130	Construction Methods, Materials and Equipment … OR	
ACCT-1011	Business Math Applications	
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
Communication…(See AAS Degree requirements)		3
		17

Third Semester		Credits
ATGL-2330	Transits, Leveling Instruments and Lasers	2
ATGL-2350	Curtainwall Fabrication and Installation	2
ATPT-2320	Safe Work Practices	3
ATDW-xxxx	ATDW elective course … OR	2
ATGL-xxxx	ATGL elective course … OR	
ATPT-xxxx	ATPT elective course	
BADM-xxxx	Business Elective … OR	3
CNST-xxxx	CNST Elective	
Arts & Hum (see AAB/AAS degree requirements)		3
		15

Fourth Semester		Credits
AIT-2990	Contracting In A Diverse World [C]	3
ATGL-2340	Advanced Welding	2
ATPT-1640	Rigging and Hoisting	2
BADM-xxxx	Business Elective … OR	3
CNST-xxxx	CNST Elective	
Soc & Beh Sci/Sciences (see AAB/AAS Degree Requirements)		3
		13

PROGRAM TOTAL		60 - 61

APPLIED INDUSTRIAL TECHNOLOGY (Glazing) (Continued)

Construction Management Electives		Credits
Recommended electives for Construction Management:		
CNST-1281	Construction Engineering Orientation	3
CNST-1510	Green Building & Sustainability I	3
CNST-1730	Construction Print Reading	2
CNST-2130	Construction Methods, Materials and Equipment	3

Business & Supervision Electives		Credits
Recommended electives for Business & Supervision:		
BADM-1020	Introduction to Business	3
BADM-1121	Principles of Management & Organizational Behavior	4
BADM-1210	Labor-Management Relations	3

Entrepreneur Electives		Credits
Recommended electives for Entrepreneur:		
BADM-1300	Small Business Management	4
BADM-2450	New Business Development	5
BADM-2470	Marketing Techniques for Small Business	3

Personal Finance		Credits
Recommended electives for Personal Finance:		
ACCT-1011	Business Math Applications	3
FIN-1061	Personal Finance	3

C = Capstone course.

GLAZING
APPRENTICESHIP PROGRAM
Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. This certificate emphasizes the skill set required to be a highly skilled craftsman. The Glazier cuts and installs all types of glass. Materials include clear and heat absorbing glass, obscure glass, mirrors, leaded glass panels and insulating glass. Glazier also fabricates aluminum entrances, sidelights and show windows, and works with plastic and porcelain panels in metal and wood frames. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the Associate of Applied Science degree with a concentration in Glazing.

Apprenticeship Coordinator – 216-987-3197

Program Admission Requirements:
- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training
- Aptitude test - Contact program coordinator for information
- Intent-to-hire agreement with participating contractor

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply basic math concepts to accurately determine material and labor needs for a specific task.

2. Apply fundamentals of workplace health and safety related to the construction site commensurate with state, federal, local, contractor's and customer's standards and policies.

3. Identify and resolve unexpected issues that impede successful and timely completion of a specified task.

4. Demonstrate effective listening, verbal, written, and conflict management skills to communicate accurately and respectfully with co-workers and customers.

5. Apply finishing trade skills, techniques, and philosophies to complete the assigned task in an efficient, timely and professional manner.

6. Interpret drawings and use principals of glass, layout techniques, math, materials, tools and equipment to properly fabricate, assemble, and install all types of glass window and door systems.

7. Sit for welding certification as it relates to the glazing industry.

Suggested Semester Sequence

First Semester		Credits
ATGL-1330	Hand Tools for Glaziers	2
ATGL-1620	Glass and Mirror Replacement and Installation	2
ATGL-1630	Basic Welding	2
ATPT-1300	Introduction to Painting, Drywall Finishing and Glazing	2
ATPT-1320	Safety Standards for Construction (OSHA-10)	3
ATGL-xxxx	ATGL elective course … OR	2
ATPT-xxxx	ATPT elective course … OR	2
ATDW-xxxx	ATDW elective course	2
		13

Second Semester		Credits
ATGL-1640	Door Fabrication and Installation	2
ATGL-2330	Transits, Leveling Instruments and Lasers	2
ATGL-2350	Curtainwall Fabrication and Installation	2
ATPT-1650	Blueprints I: Construction Fundamentals	2
ATPT-2320	Safe Work Practices	3
ATDW-xxxx	ATDW elective course … OR	2
ATGL-xxxx	ATGL elective course … OR	
ATPT-xxxx	ATPT elective course	
		13

Summer Semester		Credits
ATGL-2340	Advanced Welding	2
ATPT-1640	Rigging and Hoisting	2
		4

	PROGRAM TOTAL	30

APPLIED INDUSTRIAL TECHNOLOGY (Ironworking)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Ironworking

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in Ironworking, as well as an Associate of Applied Science degree. A three-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. The Ironworker erects, assembles, and installs fabricated structural metal products, usually large metal beams, in the erection of industrial, commercial, or large residential buildings. Structural Ironworkers erect the steel framework of bridges and buildings. Reinforcing Rod Ironworkers set steel bars or mesh in concrete forms to strengthen concrete in buildings and bridges. Ornamental Ironworkers install metal stairways, catwalks, gratings, grills, screens, fences, and decorative ironwork. The Rigger is an ironworker whose job is to move heavy machinery, using rollers, forklifts, and other sources of power.

Apprenticeship Coordinator – 216-987-3197

Program Admission Requirements:
- Aptitude Test
- High School Diploma/GED
- Compass Placement Test, eligibility for ENG-1010
- Compass Placement Test, eligibility for MATH-1xxx

Other Information:
- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.
- Applicants are reviewed and selected by committee for admission to the program

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Listen, ask questions, confirm understanding and use hand signals when needed to communicate with job steward, foreman and other journeymen on the crew to ensure effective and safe completion of the job and to be environmentally sensitive.

2. Act according to the ironworkers Code of Excellence and continually upgrade knowledge and skills.

3. Apply OSHA, company and in-house standards and policies, first aid and CPR to maintain a safe work site that is environmentally sensitive.

4. Interpret appropriate blueprints for a given project and apply basic math and geometry to determine layout.

5. Fabricate, erect and detail the structure and/or precast using appropriate equipment and tools in a safe, effective and environmentally sensitive manner for industrial, commercial or large residential building clients.

6. Fabricate, erect and detail stairways, catwalks, curtain walls, handrails, gratings, screens, fences and windmills using appropriate equipment and tools in a safe, effective and environmentally sensitive manner for industrial, commercial or large residential building clients.

7. Fabrication and placement of rebar and post tensioning using appropriate equipment and tools in a safe, effective and environmentally sensitive manner for industrial, commercial or large residential building clients.

8. Move and install machinery using rollers, forklifts and other appropriate equipment and tools in a safe, effective and environmentally safe manner.

9. Be certified in OSHA/O and Subpar R; D1.5 for Shield Metal and Flux Core Arc Welding; CPR/AED and First Aid; Forklift Operations; Scaffolding Erector and Dismantling; Rigging; Post Tensioning Unbonded and Bonded; HAZMAT and Material Abatement; Drug Free Workplace; and Mine Safety and Health Act (MSHA).

Suggested Semester Sequence

First Semester		Credits
ATIW-1300	Structural Steel Concepts	2
ATIW-1310	Safety for Ironworkers	1
ATIW-1320	Steel Construction Procedures	1
ATIW-1330	Erection Concepts and Practices	3
ATIW-1410	Practical Applications of Reinforcing Steel	1
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MATH-1xxx	1000-level MATH course or higher	3
		14

Second Semester		Credits
ATIW-1600	Welding Fundamentals for Ironworkers	3
ATIW-2300	Shielded Metal Arc Welding	3
ATIW-2310	Welding Specialties	3
ATIW-2320	Welding Blueprints and Design	3
BADM-xxxx	Business Elective … OR	3
CNST-1xxx	CNST elective	
Communication…(See AAS Degree requirements) [1]		3
		18

Third Semester		Credits
ATIW-2330	Pre-Construction Planning of Specialty Applications	2
ATIW-2340	Specialty Installation Equipment	2
ATIW-2350	Ornamental Systems and Railings	2
ATIW-2360	Ornamental Applications	2
BADM-xxxx	Business Elective … OR	3
CNST-1xxx	CNST elective	
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	3
Arts & Hum (see AAB/AAS degree requirements)		3
		17

Fourth Semester		Credits
AIT-2990	Contracting In A Diverse World [C]	3
ATIW-2500	Rigging and Hoisting	3
BADM-xxxx	Business Elective … OR	3
CNST-xxxx	CNST Elective	
BADM-xxxx	Business Elective … OR	3
CNST-xxxx	CNST Elective	
Soc & Beh Sci/Sciences (see AAB/AAS Degree Requirements)		3
		15
	PROGRAM TOTAL	64

[1] ENG-2151 Technical Writing highly recommended.

[C] = Capstone course.

APPLIED INDUSTRIAL TECHNOLOGY (Ironworking) (Continued)

ELECTIVES

Business electives		Credits
BADM-1020	Introduction to Business	3
BADM-1121	Principles of Management & Organizational Behavior	4
BADM-1210	Labor-Management Relations	3
BADM-1300	Small Business Management	4
BADM-2150	Business Law	4
BADM-2450	New Business Development	5
BADM-2470	Marketing Techniques for Small Business	3

Construction Management electives		Credits
CNST 1281	Construction Engineering Orientation	3
CNST 1510	Green Building & Sustainability I	3
CNST 1730	Construction Print Reading	2
CNST 2130	Construction Methods, Materials and Equipment	3

IRONWORKING

APPRENTICESHIP PROGRAM

Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A three year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. The Ironworker erects, assembles, and installs fabricated structural metal products, usually large metal beams, in the erection of industrial, commercial, or large residential buildings. Structural Ironworkers erect the steel framework of bridges and buildings. Reinforcing Rod Ironworkers set steel bars or mesh in concrete forms to strengthen concrete in buildings and bridges. Ornamental Ironworkers install metal stairways, catwalks, gratings, grills, screens, fences, and decorative ironwork. The Rigger is an ironworker whose job is to move heavy machinery, using rollers, forklifts, and other sources of power. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the Associate of Applied Science degree with a concentration in Ironworking.

Apprenticeship Coordinator – 216-987-3197

Program Admission Requirements:
- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.
- Aptitude Test – contact Program Coordinator for information.
- Applicants are reviewed and selected by committee for admission to the program.

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Listen, ask questions, confirm understanding and use hand signals when needed to communicate with job steward, foreman and other journeymen on the crew to ensure effective and safe completion of the job and to be environmentally sensitive.

2. Act according to the ironworkers Code of Excellence and continually upgrade knowledge and skills.

3. Apply OSHA, company and in-house standards and policies, first aid and CPR to maintain a safe work site that is environmentally sensitive.

4. Interpret appropriate blueprints for a given project and apply basic math and geometry to determine layout.

5. Fabricate, erect and detail the structure and/or precast using appropriate equipment and tools in a safe, effective and environmentally sensitive manner for industrial, commercial or large residential building clients.

6. Fabricate, erect and detail stairways, catwalks, curtain walls, handrails, gratings, screens, fences and windmills using appropriate equipment and tools in a safe and effective and environmentally sensitive manner for industrial, commercial or large residential building clients.

7. Fabrication and placement of rebar and post tensioning using appropriate equipment and tools in a safe, effective and environmentally sensitive manner for industrial, commercial or large residential building clients.

8. Move and install machinery using rollers, forklifts and other appropriate equipment and tools in a safe, effective and environmentally safe manner.

9. Be certified in OSHA/O and Subpar R; D1.5 for Shield Metal and Flux Core Arc Welding; CPR/AED and First Aid; Forklift Operations; Scaffolding Erector and Dismantling; Rigging; Post Tensioning Unbonded and Bonded; HAZMAT and Material Abatement; Drug Free Workplace; and Mine Safety and Health Act (MSHA).

Suggested Semester Sequence

First Semester		Credits
ATIW-1300	Structural Steel Concepts	2
ATIW-1310	Safety for Ironworkers	1
ATIW-1320	Steel Construction Procedures	1
ATIW-1330	Erection Concepts and Practices	3
		7

Second Semester		Credits
ATIW-1600	Welding Fundamentals for Ironworkers	3
ATIW-1400	Principles of Reinforcing Steel	2
ATIW-1410	Practical Applications of Reinforcing Steel	1
ATIW-2300	Shielded Metal Arc Welding	3
ATIW-2310	Welding Specialties	3
ATIW-2320	Welding Blueprints and Design	3
		15

Summer Semester		Credits
ATIW-2330	Pre-Construction Planning of Specialty Applications	2
ATIW-2340	Specialty Installation Equipment	2
ATIW-2350	Ornamental Systems and Railings	2
ATIW-2360	Ornamental Applications	2
ATIW-2500	Rigging and Hoisting	3
		11
	PROGRAM TOTAL	33

APPLIED INDUSTRIAL TECHNOLOGY (Manufacturing Technology)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Manufacturing Technology

   Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The Apprenticeship Program prepares the student to work as a skilled Machinist, as well as earn an Associate of Applied Science Degree in Applied Industrial Technology. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Machinists or Tool Makers are involved in the manufacture of precision machined metal components used by many industries including the aerospace, automotive, medical, and energy fields. Many of the machine tools are run by computer numerical control (CNC). The Machinist of today must possess a wide skill set of mathematical knowledge, technical disciplines, and the ability to work independently and in team environments. Working from blueprints or drawings, machinists use a variety of specialized metal cutting machine tools to produce precision parts.

Apprenticeship Coordinator – 216-987-3058

Program Admission Requirements:

- High School Graduate or GED Equivalency
- Applicants must be sponsored by a participating employer

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Listen, ask questions and collaborate with co-workers and supervisor during the manufacturing process to produce a high quality product.

2. Be reliable, conscientious, respectful and committed to the organization's mission.

3. Apply principles and practice of safety while performing daily tasks.

4. Recognize, analyze and apply knowledge, resources and creativity to resolve problems as they arise.

5. Apply advanced concepts of shop math, blueprint reading, inspection and knowledge of machining and manufacturing principles to produce a quality product that meets customer specification in a safe and efficient manner.

Suggested Semester Sequence

First Semester		Credits
ATMT-1100	Manufacturing Skills I	3
ATMT-1110	Manufacturing Skills II	2
ATMT-1200	Machine Tool Theory	4
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
ISET-1310	Mechanical Power Transmission	2
MATH-1xxx	1000-level MATH course or higher	3
		17

Second Semester		Credits
ATMT-1300	Manufacturing Procedures	2
ATMT-1500	Manufacturing Technology Skills I	4
ATMT-1600	Introduction to CAD	2
BADM-1020	Introduction to Business	3
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
SPCH-1000	Fundamentals of Interpersonal Communication	3
		17

Third Semester		Credits
ATMT-2300	Advanced Manufacturing Procedures	2
ATMT-2500	Manufacturing Technology Skills II	4
ATMT-2600	CNC Programming / Operations	2
BADM-1120	Principles of Management	4
Arts & Hum (see AAB/AAS degree requirements)		3
Soc & Beh Sci/Sciences (see AAB/AAS Degree Requirements)		3
		18

Fourth Semester		Credits
ATMT-2620	CAM Principles	2
ATMT-2700	Manufacturing Technology Skills III	4
ATMT-2990	Manufacturing Operation Principles [C]	3
ATMT-2xxx	Any 2000 level ATMT elective course	2
ATMT-2xxx	Any 2000 level ATMT elective course	2
ISET-1300	Mechanical/Electrical Print Reading	2
Arts & Hum/Soc & Beh Sci (see AAS Degree requirements)		2
		17

	PROGRAM TOTAL	69

[C] = Capstone course.

CNC MACHINING AND COMPOSITES MANUFACTURING

Short-Term Certificate

   The CNC Machining and Composites Manufacturing Program is a Fast-Track Training Program for students looking to gain entry into the areas of Composite Manufacturing and Precision Machining. The program is divided equally between classroom and hands-on training. Students learn the fundamentals of becoming a Skilled Machinist on both manual and CNC machine tools. The CNC Machining and Composites Manufacturing Technology Program provides the theoretical and hands-on experience to enable the student to enter the industry at the Pre-Apprenticeship level.

Degree: Students may apply credits toward AIT (Manufacturing Technology) Degree Program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Listen, ask questions and collaborate with co-workers and supervisor during the manufacturing process to produce a high quality product.

2. Be reliable, conscientious, respectful and committed to the organization's mission.

CNC MACHINING AND COMPOSITES MANUFACTURING (Continued)

3. Apply principles and practice of safety while performing daily tasks.

4. Recognize, analyze and apply knowledge, resources and creativity to resolve problems as they arise.

5. Apply the basic concepts of shop math, blueprint reading, inspection, and knowledge of machining and manufacturing principles to produce a quality product that meets customer specification in a safe and efficient manner.

Suggested Semester Sequence

First Semester		Credits
ATMT-1000	Mechanical and Spatial Relations	4
ATMT-1100	Manufacturing Skills I	3
ATMT-1120	Machine Operations I	6
		13

Second Semester		Credits
ATMT-1110	Manufacturing Skills II	2
ATMT-1200	Machine Tool Theory	4
ATMT-1300	Manufacturing Procedures	2
ATMT-2120	Machine Operations II	6
		14
	PROGRAM TOTAL	27

APPLIED INDUSTRIAL TECHNOLOGY (Millwrighting)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Millwrighting

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in Millwrighting, as well as earn an Associate of Applied Science degree. A four year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Millwrights install, maintain, and troubleshoot industrial equipment such as conveyors, monorails, combustion turbines, and various rotating equipment.

Apprenticeship Coordinator - 216-987-3295

Program Admission Requirements:

- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.
- High School Diploma/GED
- Intent-to-hire agreement with participating contractor

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally, nonverbally and in writing with the construction team that includes members of other trades, contractor and government agencies.

2. Work independently and in a team environment to accomplish the job in a timely and professional manner.

3. Recognize, analyze and apply critical thinking to resolve issues as they arise, minimize waste and improve productivity.

4. Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor's standards and policies.

5. Exhibit pride of craftsmanship, reliability, commitment to the organization and take opportunities to upgrade skills.

6. Apply basic math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and install various construction tasks that minimize waste.

7. Be certified in OSHA, CPR/First Aid, Scaffold, fall protection and MSDS.

8. Apply knowledge of mechanics, welding, tools and equipment to diagnose, recommend, design, fabricate and install machine and conveyor compressors and tools that efficiently solve a given customer problem(s) within their time frame and budget.

9. Move and install machinery using fork lifts, rigging hardware and tools in a safe, effective and efficient manner.

10. Use precision tools to check for tolerances, and perform alignment within .001 of an inch in order to recommend necessary repairs of turbines, pumps and other related power plant equipment.

11. Be certified in forklift, rigging, aerial lift, welding, high torque and turban.

Suggested Semester Sequence

First Semester		Credits
ATCT-1301	Introduction to Carpentry	2
ATMW-1320	Introduction to Millwrighting	2
ATMW-1330	Print Reading for Millwrights	2
ATMW-1350	Hydraulics/Centrifugal Pumps	2
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
		14

Second Semester		Credits
ATMW-1450	Heavy Rigging	2
ATMW-1490	Millwright Pile Driver Weld I	2
ATMW-1720	Machinery Installation	2
ATMW-2120	Shaft Alignment	2
CNST-1730	Construction Print Reading	2
Communication...(See AAS Degree requirements)		3
		13

Third Semester		Credits
ATCT-1310	Carpentry Safety	2
ATMW-2130	Shaft Alignment II	2
ATMW-2230	Millwright Pile Driver Weld II	2
ATMW-2350	Floor Conveyor	2
CNST-2130	Construction Methods, Materials and Equipment	3
MATH-1xxx	1000-level MATH course or higher	3
Arts & Hum (see AAB/AAS degree requirements)		3
		17

APPLIED INDUSTRIAL TECHNOLOGY (Millwrighting) (Continued)

Fourth Semester		Credits
AIT-2990	Contracting In A Diverse World C	3
ATMW-2520	Millwright Pile Driver Weld III [1]	2
ATPD-2700	Millwright-Pile Driver Weld IV [1]	2
ATXX-xxxx	ATxx Elective Apprenticeship course	2 - 3
CNST-2631	Construction Management Systems	3
CNST-2990	Construction Estimating & Cost Analysis	3
Soc & Beh Sci (see AAB/AAS degree requirements)		3
		18 - 19
	PROGRAM TOTAL	62 - 63

[1]Consecutively scheduled course.

C = Capstone course.

MILLWRIGHTING
APPRENTICESHIP PROGRAM
Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A four year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Millwrights install, maintain, and troubleshoot industrial equipment such as conveyors, monorails, combustion turbines, and various rotating equipment. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the Associate of Applied Science degree with a concentration in Millwrighting.

Apprenticeship Coordinator - 216-987-3295

Program Admission Requirements:

- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.

- Intent-to-hire agreement with participating contractor.

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally, nonverbally and in writing with the construction team that includes members of other trades, contractor and government agencies.

2. Work independently and in a team environment to accomplish the job in a timely and professional manner.

3. Recognize, analyze and apply critical thinking to resolve issues as they arise, minimize waste and improve productivity.

4. Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor's standards and policies.

5. Exhibit pride of craftsmanship, reliability, commitment to the organization and take opportunities to upgrade skills.

6. Apply basic math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and install various construction tasks that minimize waste.

7. Be certified in OSHA, CPR/First Aid, Scaffold, Fall Protection and MSDS.

8. Apply knowledge of mechanics, welding, tools and equipment to diagnose, recommend, design, fabricate and install machine and conveyor compressors and tools that efficiently solve a given customer problem(s) within their time frame and budget.

9. Move and install machinery using fork lifts, rigging hardware and tools in a safe, effective and efficient manner.

10. Use precision tools to check for tolerances, and perform alignment within .001 of an inch in order to recommend necessary repairs of turbines, pumps and other related power plant equipment.

11. Be certified in forklift, rigging, aerial lift, welding, high torque and turban.

Suggested Semester Sequence

First Semester		Credits
ATCT-1301	Introduction to Carpentry	2
ATMW-1320	Introduction to Millwrighting	2
ATMW-1330	Print Reading for Millwrights	2
ATMW-1350	Hydraulics/Centrifugal Pumps	2
ATMW-1450	Heavy Rigging	2
ATMW-1490	Millwright Pile Driver Weld I	2
		12

Second Semester		Credits
ATCT-1310	Carpentry Safety	2
ATMW-1720	Machinery Installation	2
ATMW-2120	Shaft Alignment	2
ATMW-2350	Floor Conveyor	2
ATMW-2230	Millwright Pile Driver Weld II	2
ATXX-xxxx	ATxx Elective Apprenticeship course	2 - 3
		12 - 13

Summer Semester		Credits
ATMW-2130	Shaft Alignment II	2
ATMW-2520	Millwright Pile Driver Weld III	2
ATPD-2700	Millwright-Pile Driver Weld IV	2
		6
	PROGRAM TOTAL	30 - 31

APPLIED INDUSTRIAL TECHNOLOGY
(Operating Engineers)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Operating Engineers

   Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in Operating Engineers, as well as earn an Associate of Applied Science Degree. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman and equipment mechanic. Operating engineers operate and maintain hoisting, grading, excavating and paving equipment, consisting of cranes, bulldozers, scrapers, graders, endloaders, concrete and asphalt plants, rollers and pumps. The Operating Engineer is generally employed in the building of highways, airports, buildings, waterways, stadiums and sewers.

Apprenticeship Coordinator - 216-987-3295

Program Admission Requirements:
- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.
- High School Graduate or GED Equivalency

Other Information:
- Aptitude Test
- Intent-to-hire agreement with participating contractor

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Recognize hazardous conditions, wear appropriate safety equipment and take preventative measures following company, federal, and state procedures.

2. Operate and maintain a variety of construction equipment in a safe and productive manner.

3. Recognize and apply underlying engineering principles of the operating engineers trade, including machine characteristics, blueprint reading, problem solving and technology skills.

4. Plan and manage personal and professional life to accommodate all job requirements, including providing reliable transportation, meeting contractor needs, balancing family obligations, adapting to a flexible work schedule, complying with a drug-free environment, and taking opportunities to upgrade skills.

5. Commit to and understand the nature of working in the construction trade, especially, planning for seasonal work.

6. Communicate verbally, nonverbally, and in writing with the construction team, which includes members of all other trades, contractors, and government agencies.

7. Be prepared to sit for the CDL License exam, Forklift Operating Certification exam, and other optional specialty certifications such as the National Crane Certification Organization exam.

Suggested Semester Sequence

First Semester		Credits
ATOE-1100	Operating Engineering Concepts	4
ATOE-1200	Basic Mechanical Concepts	3
ATOE-1650	Graders and Plans	2
BADM-xxxx	Business Elective … OR	3
CNST-xxxx	CNST Elective	
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MATH-1xxx	1000-level MATH course or higher	3
		18

Second Semester		Credits
ATOE-1700	Paving, Tractor, Backhoe Operators	3
ATOE-2100	Mobile Crane	2
ATOE-2600	Bulldozer Practice	3
BADM-xxxx	Business Elective … OR	3
CNST-xxxx	CNST Elective	
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
Communication…(See AAS Degree requirements) [1]		3
		17

Third Semester		Credits
ATOE-2200	Mechanical Repair	3
ATOE-2620	Backhoe Practice	3
ATOE-xxxx	ATOE elective course	1 - 3
BADM-xxxx	Business Elective … OR	3
CNST-1730	Construction Print Reading … OR	2-3
FIN-1061	Personal Finance	
Natural Sciences Requirement (see AAB/AAS requirements)		3
		12 - 15

Fourth Semester		Credits
AIT-2990	Contracting In A Diverse World [C]	3
ATOE-2640	Advanced Grader Practice	3
ATOE-2660	Grader Safety	2
BADM-xxxx	Business Elective … OR	3
CNST-2130	Construction Methods, Materials and Equipment	
Soc & Beh Sci (See AAB/AAS degree requirements) [2]		3
		14

	PROGRAM TOTAL	61 - 64

[1]ENG-2151 Technical Writing or SPCH-1000 Interpersonal Communication highly recommended.
[2]Recommend PSY-1050.

[C] = Capstone course.

ELECTIVES

Technical Electives		Credits
Elective courses to be selected as indicated throughout the sequence.		
ATOE 2650	Safety Training Passport	1
ATOE 2670	Rough Terrain Forklift Operation	2
ATOE 2680	Hazardous Material Handling and Field Safety	2

APPLIED INDUSTRIAL TECHNOLOGY
(Operating Engineers) (Continued)

Business Electives		Credits
Recommended electives in business		
BADM-1020	Introduction to Business	3
BADM-1121	Principles of Management & Organizational Behavior	4
BADM-1210	Labor-Management Relations	3
BADM-1300	Small Business Management	4
BADM-2150	Business Law	4
BADM-2450	New Business Development	5
BADM-2470	Marketing Techniques for Small Business	3

Construction Management		Credits
Recommended electives in Construction Management		
CNST 1281	Construction Engineering Orientation	3
CNST 1510	Green Building & Sustainability I	3
CNST 1730	Construction Print Reading	2
CNST 2130	Construction Methods, Materials and Equipment	3

OPERATING ENGINEERS

APPRENTICESHIP PROGRAM

Certificate of Proficiency

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman and equipment mechanic. Operating engineers operate and maintain hoisting, grading, excavating and paving equipment, consisting of cranes, bulldozers, scrapers, graders, endloaders, concrete and asphalt plants, rollers and pumps. The Operating Engineer is generally employed in the building of highways, airports, buildings, waterways, stadiums and sewers. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the Associate of Applied Science degree with a concentration in Operating Engineers.

Apprenticeship Coordinator - 216-987-3295

Program Admission Requirements:
- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.
- Aptitude test – contact Program Coordinator for information.
- Intent-to-hire agreement with participating contractor.

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Recognize hazardous conditions, wear appropriate safety equipment and take preventative measures following company, federal, and state procedures.

2. Operate and maintain a variety of construction equipment in a safe and productive manner.

3. Recognize and apply underlying engineering principles of the operating engineers trade, including machine characteristics, blueprint reading, problem solving and technology skills.

4. Plan and manage personal and professional life to accommodate all job requirements, (including providing reliable transportation, meeting contractor needs, balancing family obligations, adapting to a flexible work schedule, complying with a drug-free environment, and taking opportunities to upgrade skills.

5. Commit to and understand the nature of working in the construction trade, especially planning for seasonal work.

6. Communicate verbally, non verbally, and in writing with the construction team, which includes members of all other trades, contractors, and government agencies.

7. Sit for the CDL License exam, Forklift Operating Certification exam, and other optional specialty certifications such as the National Crane Certification Organization exam.

Suggested Semester Sequence

First Semester		Credits
ATOE-1100	Operating Engineering Concepts	4
ATOE-1200	Basic Mechanical Concepts	3
ATOE-1650	Graders and Plans	2
ATOE-1700	Paving, Tractor, Backhoe Operators	3
		12

Second Semester		Credits
ATOE-2100	Mobile Crane	2
ATOE-2200	Mechanical Repair	3
ATOE-2600	Bulldozer Practice	3
ATOE-2620	Backhoe Practice	3
ATOE-xxxx	ATOE elective course	1 - 3
		12 - 14

Summer Semester		Credits
ATOE-2640	Advanced Grader Practice	3
ATOE-2660	Grader Safety	2
ATOE-xxxx	ATOE elective course	1 - 3
		6 - 8
	PROGRAM TOTAL	30 - 34

APPLIED INDUSTRIAL TECHNOLOGY (Painting)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Painting

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to work as a journey-level Painter, as well as earn an Associate of Applied Science Degree in Applied Industrial Technology. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Painters prepare surfaces of buildings and other structures and then apply paint and other compounds by means of brushes, rollers and sprayers. Painters apply a variety of substances including varnish, lacquers and enamels to interior surfaces and exterior structures. They may also work with wallpaper, vinyl and other materials, as well as mix paints, sandblast and waterblast.

Apprenticeship Coordinator - 216-987-3197

Program Admission Requirements:

- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training
- High School Diploma/GED
- COMPASS score: eligibility at or above ENG-1000
- COMPASS score: eligibility at or above MATH-1000
- Aptitude Test – contact program coordinator for information
- Intent-to-hire agreement with participating contractor

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply basic math concepts to accurately determine material and labor needs for a specific task.

2. Apply fundamentals of workplace health and safety related to the construction site commensurate with state, federal, local, contractor's and customer's standards and policies.

3. Identify and resolve unexpected issues that impede successful and timely completion of a specified task.

4. Demonstrate effective listening, verbal, written, and conflict management skills to communicate accurately and respectfully with co-workers and customers.

5. Apply finishing trade skills, techniques, and philosophies to complete the assigned task in an efficient, timely and professional manner.

6. Perform professional craftsmen skills to properly apply a variety of paints, wall coverings, stains and faux finishes required to complete a job in an efficient and aesthetic manner.

7. Use appropriate personal protective equipment and fall protection to ensure a safe work environment.

Suggested Semester Sequence

First Semester		Credits
ATPT-1300	Introduction to Painting, Drywall Finishing and Glazing	2
ATPT-1320	Safety Standards for Construction (OSHA-10)	3
ATPT-1330	Filling Compounds and Procedures	2
ATPT-1340	Wall Preparation and Repair	2
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
BADM-xxxx	Business Elective … OR	3
CNST-1xxx	CNST elective … OR	
ACCT-1011	Business Math Applications	
MATH-1xxx	1000-level MATH course or higher	3
		18

Second Semester		Credits
ATPT-1620	Wood Finishing	2
ATPT-1630	Color Mixing and Matching	2
ATPT-1640	Rigging and Hoisting	2
ATPT-1650	Blueprints I: Construction Fundamentals	2
ATPT-1660	Labor in American Society	2
BADM-xxxx	Business Elective … OR	3
CNST-xxxx	CNST Elective	
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
		16

Third Semester		Credits
ATGL-2400	Advanced Rigging and Hoisting … OR	2
ATPT-2370	Abrasive Blasting Techniques [1] … OR	
ATPT-2380	Special Coatings and Decorative Finishes	
ATPT-2320	Safe Work Practices	3
ATPT-2330	Spray and Industrial Painting	2
FIN-1061	Personal Finance … OR	2-3
CNST-1730	Construction Print Reading … OR	
BADM-xxxx	Business Elective	
Arts & Hum (see AAB/AAS degree requirements)		3
		12 - 13

Fourth Semester		Credits
ATPT-2340	Blueprints II: Advanced Reading and Estimating	2
ATPT-2350	Advanced Spray and Industrial Painting	2
ATPT-2360	Foreman Training	2
AIT-2990	Contracting In A Diverse World [C]	3
BADM-xxxx	Business Elective … OR	3
CNST-2130	Construction Methods, Materials and Equipment	
Communication…(See AAS Degree requirements)		3
Soc & Beh Sci /Sciences (See AAB/AAS degree requirements)		3
		18

PROGRAM TOTAL   64 - 65

[1]ATPT-2370 and ATPT-2380 may each be used only once.

[C] = Capstone course.

PAINTING
APPRENTICESHIP PROGRAM
Certificate of Proficiency

   Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Painters prepare surfaces of buildings and other structures and then apply paint and other compounds by means of brushes, rollers and sprayers. Painters apply a variety of substances including varnish, lacquers and enamels to interior surfaces and exterior structures. They may also work with wallpaper, vinyl and other materials, as well as mix paints, sandblast and waterblast. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the Associate of Applied Science degree with a concentration in Painting.

Apprenticeship Coordinator - 216-987-3197

Program Admission Requirements:

- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.
- High School Diploma / GED
- COMPASS score: eligibility at or above ENG-1000
- COMPASS score: eligibility at or above MATH-1000
- Aptitude Test – contact program coordinator for information
- Intent-to-hire agreement with participating contractor

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply basic math concepts to accurately determine material and labor needs for a specific task.
2. Apply fundamentals of workplace health and safety related to the construction site commensurate with state, federal, local, contractors and customers standards and policies.
3. Identify and resolve unexpected issues that impede successful and timely completion of a specified task.
4. Demonstrate effective listening, verbal, written, and conflict management skills to communicate accurately and respectfully with co-workers and customers.
5. Apply finishing trade skills, techniques, and philosophies to complete the assigned task in an efficient, timely and professional manner.
6. Perform professional craftsmen skills to properly apply a variety of paints, wall coverings, stains and faux finishes required to complete a job in an efficient and aesthetic manner.
7. Use appropriate personal protective equipment and fall protection to ensure a safe work environment.

Suggested Semester Sequence

First Semester		Credits
ATPT-1300	Introduction to Painting, Drywall Finishing and Glazing	2
ATPT-1320	Safety Standards for Construction (OSHA-10)	3
ATPT-1330	Filling Compounds and Procedures	2
ATPT-1340	Wall Preparation and Repair	2
ATPT-1620	Wood Finishing	2
ATPT-1650	Blueprints I: Construction Fundamentals	2
		13

Second Semester		Credits
ATGL-2400	Advanced Rigging and Hoisting	2
ATPT-1640	Rigging and Hoisting	2
ATPT-1660	Labor in American Society	2
ATPT-2320	Safe Work Practices	3
ATPT-2330	Spray and Industrial Painting	2
ATPT-2370	Abrasive Blasting Techniques	2
ATPT-2380	Special Coatings and Decorative Finishes	2
		15

Summer Semester		Credits
ATPT-2340	Blueprints II: Advanced Reading and Estimating	2
ATPT-2350	Advanced Spray and Industrial Painting	2
ATPT-2360	Foreman Training	2
		6
	PROGRAM TOTAL	34

APPLIED INDUSTRIAL TECHNOLOGY (Pile Driving)

APPRENTICESHIP PROGRAM

Associate of Applied Science degree in Applied Industrial Technology with a concentration in Pile Driving

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. The apprenticeship program prepares the student to earn a journey-level status in Pile Driving, as well as an Associate of Applied Science degree in Applied Industrial Technology. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Pile Driving is the art of driving down piles with rigs that are large machines that resemble cranes. Work can include driving concrete and metal piling as part of a foundation system, or driving wood and concrete piling to support docks and bridges. Pile Drivers can also be found on offshore oil rigs and as commercial divers in underwater construction.

Apprenticeship Coordinator - 216-987-3295

Program Admission Requirements:
- Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.
- High School Diploma / GED
- Intent-to-hire agreement with participating contractor

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally, nonverbally and in writing with the construction team that includes members of other trades, contractor and government agencies.

2. Work independently and in a team environment to accomplish the job in a timely and professional manner.

3. Recognize, analyze and apply critical thinking to resolve issues as they arise, minimize waste and improve productivity.

4. Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor's standards and policies.

5. Exhibit pride of craftsmanship, reliability, commitment to the organization and take opportunities to upgrade skills.

6. Apply basic math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and install various construction tasks that minimize waste.

7. Be certified in OSHA, CPR/First Aid, Scaffold, fall protection and MSDS.

8. Use cranes, vibrating hammers and drilling rigs to drive and secure various types of piling to develop foundations for bridges and commercial buildings.

9. Use appropriate equipment, sheeting and lagging in order to build permanent and temporary retaining walls for a variety of construction projects.

10. Setup and use crane(s) to support the equipment and drive various types of piling.

11. Be certified in rigging and welding.

Suggested Semester Sequence

First Semester		Credits
ATCT-1301	Introduction to Carpentry	2
ATCT-1310	Carpentry Safety	2
ATMW-1340	Introduction to Pile Driving	2
ATPD-1330	Print Reading for Pile Driving	2
CNST-1281	Construction Engineering Orientation	3
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MATH-1xxx	1000-level MATH course or higher	3
		17

Second Semester		Credits
ATMW-1450	Heavy Rigging	2
ATMW-1490	Millwright Pile Driver Weld I	2
ATPD-1310	Technical Measurements, Hand & Power Tool Use in Pile Driving	2
ATPD-1370	Pile Driving on Land and Water	2
CNST-1510	Green Building & Sustainability I	3
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
Arts & Hum (see AAB/AAS degree requirements)		3
		17

Third Semester		Credits
ATPD-2020	Pile Driving Technologies	2
ATPD-2220	False Work and Heavy Timber	2
ATPD-2370	Advanced Pile Driving on Land	2
ATMW-2230	Millwright Pile Driver Weld II	2
CNST-1730	Construction Print Reading	2
Communication...(See AAS Degree requirements) [1]		3
Soc & Beh Sci/Sciences (see AAB/AAS Degree Requirements)		3
		16

Fourth Semester		Credits
AIT-2990	Contracting In A Diverse World [C]	3
ATMW-2520	Millwright Pile Driver Weld III	2
ATPD-2380	Advanced Pile Driving on Water	2
ATPD-2700	Millwright-Pile Driver Weld IV	2
ATPD-2710	Millwright-Piledriver Weld V	2
CNST-2130	Construction Methods, Materials and Equipment	3
CNST-2990	Construction Estimating & Cost Analysis	3
		17

	PROGRAM TOTAL	67

[1] ENG 2151 highly recommended.

[C] = Capstone course.

PILE DRIVING
Certificate of Proficiency

   Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. A four-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. Pile Driving is the art of driving down piles with rigs that are large machines that resemble cranes. Work can include driving concrete and metal piling as part of a foundation system, or driving wood and concrete piling to support docks and bridges. Pile Drivers can also be found on offshore oil rigs and as commercial divers in underwater construction. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies. Apprentices may apply technical studies together with general education coursework toward the Associate of Applied Science degree with a concentration in Pile Driving.

1.   Communicate verbally, nonverbally and in writing with the construction team that includes members of other trades, contractor and government agencies.

2.   Work independently and in a team environment to accomplish the job in a timely and professional manner.

3.   Recognize, analyze and apply critical thinking to resolve issues as they arise, minimize waste and improve productivity.

4.   Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor's standards and policies.

5.   Exhibit pride of craftsmanship, reliability, commitment to the organization and take opportunities to upgrade skills.

6.   Apply basic math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and install various construction tasks that minimize waste.

7.   Be certified in OSHA, CPR/First Aid, Scaffold, fall protection and MSDS.

8.   Use cranes, vibrating hammers and drilling rigs to drive and secure various types of piling to develop foundations for bridges and commercial buildings.

9.   Use appropriate equipment, sheeting and lagging in order to build permanent and temporary retaining walls for a variety of construction projects.

10.   Setup and use crane(s) to support the equipment and drive various types of piling.

11.   Be certified in rigging and welding.

Apprenticeship Coordinator - 216-987-3295

Suggested Semester Sequence

First Semester		Credits
ATCT-1301	Introduction to Carpentry	2
ATCT-1310	Carpentry Safety	2
ATMW-1340	Introduction to Pile Driving	2
ATMW-1450	Heavy Rigging	2
ATMW-1490	Millwright Pile Driver Weld I	2
ATPD-1330	Print Reading for Pile Driving	2
		12

Second Semester		Credits
ATMW-2230	Millwright Pile Driver Weld II	2
ATPD-1310	Technical Measurements, Hand & Power Tool Use in Pile Driving	2
ATPD-1370	Pile Driving on Land and Water	2
ATPD-2020	Pile Driving Technologies	2
ATPD-2220	False Work and Heavy Timber	2
ATPD-2370	Advanced Pile Driving on Land	2
ATPD-2380	Advanced Pile Driving on Water	2
		14

Summer Semester		Credits
ATMW-2520	Millwright Pile Driver Weld III [1]	2
ATPD-2700	Millwright-Pile Driver Weld IV [1]	2
ATPD-2710	Millwright-Piledriver Weld V [1]	2
		6

	PROGRAM TOTAL	32

[1]Consecutively scheduled courses.

APPLIED INDUSTRIAL TECHNOLOGY (Pipefitting)
APPRENTICESHIP PROGRAM
Associate of Applied Science degree in Applied Industrial Technology with a concentration in Pipefitting

   Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training, and the United Association (UA). The apprenticeship program prepares the student to earn a journey-level status in Plumbing; as well as earn an Associate of Applied Science Degree in Applied Industrial Technology. A five-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. A pipefitter apprentice will learn to layout, fabricate, assemble, install, maintain, and repair piping systems that transport fluids, slurries and gas in the residential, commercial and industrial sectors. They specialize in planning, design, and installation of low- and high-pressure steam systems. Their work is in fields such as refineries, paper mills, nuclear power plants, manufacturing plants, and in the automotive industry. The systems that the pipefitter may work on are some of the highest pressure and temperature applications and require a thorough knowledge of scientific principles to complete this work safely.

Apprenticeship Coordinator - 216-987-3295

Program Admission Requirements:
• Participant must be currently working in a registered apprenticeship program in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training, and the United Association (UA).
• High School Diploma /GED

APPLIED INDUSTRIAL TECHNOLOGY (Pipefitting) (Continued)

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally, non-verbally and in writing with the construction team that include members of other trades, contractors, customers, and public officials and agencies.

2. Work independently and in a team setting to accomplish work in a timely, professional, and cost effective manner.

3. Act according to the United Association of Plumbers and Pipe Fitters Code of Excellence and continually upgrade knowledge and skills.

4. Recognize, analyze and apply critical thinking to resolve issues as they arise while minimizing waste and improving productivity.

5. Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor's standards, policies, and regulations.

6. Apply basic and advanced math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and complete various pipe trade tasks that minimize waste.

7. Apply knowledge of math, pipe hydraulic theory, blueprints, and tools to install, repair and test basic piping systems that meet industry codes and standards.

8. Apply knowledge of advance math to install, repair and test hydronic heating and cooling systems, steam systems, process piping, fire protection sprinkler systems, and refrigeration systems according to national, state, local and other applicable industry codes and standards.

9. Obtain all required certifications in the pipe fitting industry.

Suggested Semester Sequence

First Semester		Credits
ATPL-1000	Care and Use of Tools	2
ATPF-1210	Rigging	2
ATCM-1340	OSHA Standards for the Construction Industry	3
MATH-1xxx	1000-level MATH course or higher	3
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
BADM-xxxx	Business Elective … OR	3
CNST-xxxx	CNST Elective	
		16

Second Semester		Credits
ATPF-1220	Basic Pipefitting Layout	1
ATPF-1270	Sprinkler Drawings	4
BADM-xxxx	Business Elective … OR	3
CNST-xxxx	CNST Elective … OR	
FIN-1061	Personal Finance	
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
Communication…(See AAS Degree requirements)		3
		14

Third Semester		Credits
ATPF-1360	Hydronic Heating and Cooling	2
ATPL-2510	Pumps	2
ATPF-xxxx	Elective	1
BADM-xxxx	Business Elective … OR	3
CNST-1730	Construction Print Reading	2
Natural Science (lecture)		3
Arts & Hum/Soc & Beh Sci (see AAS Degree requirements)		3
		13 - 14

Fourth Semester		Credits
ATPF-2340	Steam Systems	2
ATPF-xxxx	Elective	1
ATPF-xxxx	Pipefitter Elective	2
BADM-2xxx	2000 level Business Elective … OR	3
CNST-2130	Construction Methods, Materials and Equipment	
		8

Summer Semester		Credits
AIT-2990	Contracting In A Diverse World	3
ATPF-2510	Sprinkler Fire Protection	2
ATPF-xxxx	Pipefitter Elective	2
ATPL-2560	Foreman Certification	2
		9

	PROGRAM TOTAL	60 - 61

Electives		Credits
BADM-1020	Introduction to Business	3
BADM-1121	Principles of Management & Organizational Behavior	4
BADM-1210	Labor-Management Relations	3
BADM-1300	Small Business Management	4
BADM-2150	Business Law	4
BADM-2450	New Business Development	5
BADM-2470	Marketing Techniques for Small Business	3
CNST 1281	Construction Engineering Orientation	3
CNST 1510	Green Building & Sustainability I	3
CNST 1730	Construction Print Reading	2
CNST 2130	Construction Methods, Materials and Equipment	3
FIN 1061	Personal Finance	3

PIPEFITTING
APPRENTICESHIP PROGRAM
Certificate of Proficiency

   Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training, and the United Association (UA). The apprenticeship program prepares the student to earn a journey-level status in Plumbing; as well as earn an Associate of Applied Science Degree in Applied Industrial Technology. A five-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. A pipefitter apprentice will learn to layout, fabricate, assemble, install, maintain, and repair piping systems that transport fluids, slurries and gas in the residential, commercial and industrial sectors. They specialize in planning, design, and installation of low- and high-pressure steam systems. Their work is in fields such as refineries, paper mills, nuclear power plants, manufacturing plants, and in the automotive industry. The systems that the pipefitter may work on are some of the highest pressure and temperature applications and require a thorough knowledge of scientific principles to complete this work safely.

Apprenticeship Coordinator - 216-987-3295

 Program Admission Requirements:
 - Participant must be currently working in a registered apprenticeship program in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training, and the United Association (UA).
 - High School Diploma /GED

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally, non-verbally and in writing with the construction team that include members of other trades, contractors, customers, and public officials and agencies.
2. Work independently and in a team setting to accomplish work in a timely, professional, and cost effective manner.
3. Act according to the United Association of Plumbers and Pipe Fitters Code of Excellence and continually upgrade knowledge and skills.
4. Recognize, analyze and apply critical thinking to resolve issues as they arise while minimizing waste and improving productivity.
5. Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor's standards, policies, and regulations.
6. Apply basic and advanced math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and complete various pipe trade tasks that minimizes waste.
7. Apply knowledge of math, pipe hydraulic theory, blueprints, and tools to install, repair and test basic piping systems that meet industry codes and standards.
8. Apply knowledge of advance math to install, repair and test hydronic heating and cooling systems, steam systems, process piping, fire protection sprinkler systems, refrigeration systems according to national, state, local and other applicable industry codes and standards.
9. Obtain all required certifications in the pipe fitting industry.

Suggested Semester Sequence

First Semester		Credits
ATPL-1000	Care and Use of Tools	2
ATPF-1070	Soldering Brazing and Pipefitting Tools	2
ATCM-1340	OSHA Standards for the Construction Industry	3
ATPF-1210	Rigging	2
ATPF-1220	Basic Pipefitting Layout	1
ATPF-1270	Sprinkler Drawings	4
		14

Second Semester		Credits
ATPF-1360	Hydronic Heating and Cooling	2
ATPF-2510	Sprinkler Fire Protection	2
ATPF-2340	Steam Systems	2
ATPF-xxxx	Elective	1
ATPF-xxxx	Elective	1
ATPF-xxxx	Pipefitter Elective	2
		10

Summer Semester		Credits
ATPL-2510	Pumps	2
ATPL-2560	Foreman Certification	2
ATPF-xxxx	Pipefitter Elective	2
		6

PROGRAM TOTAL		30

Student must complete apprenticeship and be eligible for journey certification to receive Certificate of Proficiency

APPLIED INDUSTRIAL TECHNOLOGY (Plumbing)

Associate of Applied Science in Applied Industrial Technology with a concentration in Plumbing

Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training, and the United Association (UA). The apprenticeship program prepares the student to earn a journey-level status in Plumbing; as well as earn an Associate of Applied Science Degree in Applied Industrial Technology. A five-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. An apprentice will learn to install, repair, maintain and service piping systems, plumbing systems and equipment used for drinking (potable) water distribution, sanitary storm water systems and waste disposal. Additional opportunities for plumbers can include technical installations for Medical Gas, Hydronic in-floor heating, Solar Panels, Heat Pumps, Cross-Connection Control and many other systems necessary for the health and safety of the general public.

Apprenticeship Coordinator - 216-987-3295

Program Admission Requirements:
- Participant must be currently working in a registered apprenticeship program in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training, and the United Association (UA).
- High School Diploma /GED

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally, non-verbally and in writing with the construction team that include members of other trades, contractors, customers, and public officials and agencies.

2. Work independently and in a team setting to accomplish work in a timely, professional, and cost effective manner.

3. Act according to the United Association of Plumbers and Pipe Fitters Code of Excellence and continually upgrade knowledge and skills.

4. Recognize, analyze and apply critical thinking to resolve issues as they arise while minimizing waste and improving productivity.

5. Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor's standards, policies, and regulations.

6. Apply basic and advanced math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and complete various pipe trade tasks that minimizes waste.

7. Apply knowledge of math, pipe hydraulic theory, blueprints, and tools to install, repair and test basic piping systems that meet industry codes and standards.

8. Apply knowledge of advance math to install, repair and test Potable Water, Storm/Sanitary Drainage, Fuel Gas and Medical Gases Systems according to national, state, local and other applicable industry codes and standards.

9. Obtain all required certifications in the plumbing industry.

Suggested Semester Sequence

First Semester		Credits
ATPL-1000	Care and Use of Tools[1]	2
ATPL-1010	Soldering and Brazing[1]	2
ATPL-1040	Plumbing Heritage	2
ATPL-1070	Pipe Fittings, Valves, and Supports	2
MATH-1xxx	1000-level MATH course or higher	3
BADM-xxxx	Business Elective … OR	3
CNST-xxxx	CNST Elective	_
		14

Second Semester		Credits
ATCM-2320	Blueprint Fundamentals-Construction	2
ATPL-1030	State of Ohio Plumbing Code I	2
CNST-1730	Construction Print Reading … OR	2
BADM-xxxx	Business Elective	3
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
		12 - 13

Third Semester		Credits
ATPL-1210	State of Ohio Plumbing Code II	2
ATPL-1220	Gas Systems	2
ATPL-1230	Water supply	2
BADM-xxxx	Business Elective … OR	3
CNST-xxxx	CNST Elective … OR	
FIN-1061	Personal Finance	
ENG-2151	Technical Writing	3
Natural Sciences Requirement (see AAB/AAS requirements)		3
		15

Fourth Semester		Credits
AIT-2990	Contracting In A Diverse World [C]	3
ATPL-2320	State of Ohio Plumbing Code III	2
ATPT-2340	Blueprints II: Advanced Reading and Estimating	2
ATPL-2350	Electricity for Plumbers	2
BADM-xxxx	Business Elective … OR	3
CNST-2130	Construction Methods, Materials and Equipment	3
Arts & Hum/Soc & Beh Sci (see AAS Degree requirements)		3
		15

Summer Semester		Credits
ATPL-1060	Medical Gas	2
ATPL-2410	City and State Backflow Certification	2
ATPL-2430	Trench and Excavation Safety/Confined Space	1
ATPL-2440	City of Cleveland Plumbing License	1
		6

PROGRAM TOTAL		62 - 63

[1]Apprentice may be awarded credit from JATC for life experience

[C] =   Capstone course.

(continued on next page)

APPLIED INDUSTRIAL TECHNOLOGY (Plumbing) (Continued)

ELECTIVES   Select from the following courses to meet 12 credit elective requirements.

Business Electives		Credits
BADM 1020	Introduction to Business	3
BADM-1121	Principles of Management & Organizational Behavior	4
BADM 1300	Small Business Management	4
BADM 2150	Business Law	4
BADM 2450	New Business Development	5
BADM 2470	Marketing Techniques for Small Business	3
		12

Construction Management Sequence		Credits
CNST sequence		
CNST 1281	Construction Engineering Orientation	3
CNST 1510	Green Building & Sustainability I	3
CNST 1730	Construction Print Reading	2
CNST 2130	Construction Methods, Materials and Equipment	3
		11

PLUMBING
APPRENTICESHIP PROGRAM
Certificate of Proficiency

Student must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training, and the United Association (UA). The apprenticeship program prepares the student to earn a journey-level status in Plumbing. A five-year apprenticeship emphasizes the skill set required to be a journey-level Plumber. The Certificate of Proficiency provides academic recognition of the accomplishment of the journey-level worker. An apprentice will learn to install, repair, maintain and service piping systems, plumbing systems and equipment used for drinking (potable) water distribution, sanitary storm water systems and waste disposal. Additional opportunities for plumbers can include technical installations for Medical Gas, Hydronic in-floor heating, Solar Panels, Heat Pumps, Cross-Connection Control and many other systems necessary for the health and safety of the general public.

Apprenticeship Coordinator - 216-987-3195

Program Admission Requirements:
- Participant must be currently working in a registered apprenticeship program in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training, and the United Association (UA).
- High School Diploma /GED

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally, non-verbally and in writing with the construction team that include members of other trades, contractors, customers, and public officials and agencies.

2. Work independently and in a team setting to accomplish work in a timely, professional, and cost effective manner.

3. Act according to the United Association of Plumbers and Pipe Fitters Code of Excellence and continually upgrade knowledge and skills.

4. Recognize, analyze and apply critical thinking to resolve issues as they arise while minimizing waste and improving productivity.

5. Use appropriate personal protective equipment and fall protection to ensure a safe and environmentally sensitive work environment in accordance with OSHA and other federal, state, local and contractor's standards, policies, and regulations.

6. Apply basic and advanced math concepts and operations and blueprint reading to accurately determine layout in order to fabricate and complete various pipe trade tasks that minimizes waste.

7. Apply knowledge of math, pipe hydraulic theory, blueprints, and tools to install, repair and test basic piping systems that meet industry codes and standards.

8. Apply knowledge of advance math to install, repair and test Potable Water, Storm/Sanitary Drainage, Fuel Gas and Medical Gases Systems according to national, state, local and other applicable industry codes and standards.

9. Obtain all required certifications in the plumbing industry.

Suggested Semester Sequence

First Semester		Credits
ATPL-1000	Care and Use of Tools [1]	2
ATPL-1010	Soldering and Brazing [1]	2
ATPL-1040	Plumbing Heritage	2
ATPL-1070	Pipe Fittings, Valves, and Supports	2
ATPL-1030	State of Ohio Plumbing Code I	2
		10

Second Semester		Credits
ATCM-2320	Blueprint Fundamentals-Construction	2
ATPL-1210	State of Ohio Plumbing Code II	2
ATPL-1220	Gas Systems	2
ATPL-1230	Water supply	2
ATPL-2320	State of Ohio Plumbing Code III	2
ATPL-2350	Electricity for Plumbers	2
ATPT-2340	Blueprints II: Advanced Reading and Estimating	2
		14

Summer Semester		Credits
ATPL-1060	Medical Gas	2
ATPL-2410	City and State Backflow Certification	2
ATPL-2430	Trench and Excavation Safety/Confined Space	1
ATPL-2440	City of Cleveland Plumbing License	1
		6

| | PROGRAM TOTAL | 30 |

[1]Apprentice may be awarded credit from JATC for life experience.

APPLIED INDUSTRIAL TECHNOLOGY (Sheet Metal Working)

Associate of Applied Science in Applied Industrial Technology with a concentration in Sheet Metal Working

Students must be working in a registered apprenticeship program in conjunction with the U. S. Department of Labor, Bureau of Apprenticeship and Training. The 5 year apprenticeship program provides training toward journey level certification and the technical component of the Associate of Applied Science degree. Sheet Metal Workers make, install, and maintain heating, ventilation, and air-conditioning duct systems; roofs; siding; rain gutters; downspouts; skylights; restaurant equipment; outdoor signs; railroad cars; tailgates; customized precision equipment; and many other products made from metal sheets. They also may work with fiberglass and plastic materials.

Apprenticeship Coordinator – 216-987-3295

Program Admission Requirements:
- Participant must be currently working in a registered apprenticeship program in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.
- High School Diploma /GED

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally, nonverbally and in writing using appropriate technology with co-workers, other trades, design professionals, suppliers and end users in order to complete projects in a timely fashion in accordance with local codes and job specifications.

2. Working independently or as part of a team in a respectful and professional manner, resolving conflicts when needed, in order to complete a project in a timely fashion.

3. Exhibit pride of craftsmanship and reliability; actively engage in all aspects of the project and take opportunities to upgrade skills.

4. Recognize hazardous materials and conditions, wear appropriate personal protective equipment and take preventative measures following federal, state, local laws, policies and procedures.

5. Layout and fabricate sheet metal items safely using shop equipment, hand and power tools, computerized equipment and apply basic math to meet job specifications in accordance with Sheet Metal Air Condition Contractors National Association (SMACNA).

6. Install sheet metal items safely using hand and power tools, ladders, scaffolds and lifting devices, and apply basic math to meet job specifications in accordance with SMACNA standards.

7. Read and interpret blueprints, specifications and shop drawing in order to fabricate and install various sheet metal components.

8. Startup HVAC equipment and service accordingly to meet project specification.

9. Safely test and balance an installed system to ensure that it is operating to design specifications.

10. Be certified in OSHA 10 and OSHA 30 Construction Safety and Health. Be prepared for the following certifications:
    a. EPA Section 608 Certification
    b. AWSD1.1 and AWSD1.9 Welding Certifications
    c. HVAC Firelife Safety Level 1 Technician Certification

Suggested Semester Sequence

First Semester		Credits
ATSM-1010	Benefits Management	1
ATSM-1020	Trade History	1
ATSM-1030	Layout and Fabrication I	2
ATSM-1040	OSHA 16 Hour Safety Training	1
ATGL-1630	Basic Welding	2
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
BADM-xxxx	Business Elective … OR	3
CNST-xxxx	CNST Elective	_
		16

Second Semester		Credits
ATSM-1220	Layout and Fabrication II	2
ATSM-1230	Field Installation	3
ATSM-2310	Refrigeration I	1
ATGL-2340	Advanced Welding	2
ATPL-2350	Electricity for Plumbers	2
BADM-xxxx	Business Elective … OR	3
CNST-xxxx	CNST Elective	
MATH-1xxx	1000-level MATH course or higher	3
		16

Third Semester		Credits
ATSM-2330	Layout and Fabrication III	3
ATSM-2340	Advanced Field Installation	3
BADM-xxxx	Business Elective … OR	3
CNST-xxxx	CNST Elective	
Arts & Hum (see AAB/AAS degree requirements)		3
Soc & Beh Sci (See AAB/AAS degree requirements)		3
		15

Fourth Semester		Credits
AIT-2990	Contracting In A Diverse World [C]	3
ATCM-1340	OSHA Standards for the Construction Industry	3
ATSM-2420	Refrigeration II	2
ATSM-2510	Commercial Roof Top Units	2
BADM-xxxx	Business Elective … OR	3 - 4
CNST-xxxx	CNST Elective	
Communication…(See AAS Degree requirements)		3
		16 - 17

	PROGRAM TOTAL	63 - 64

[C] = Capstone course.

ELECTIVES

Construction Management Electives		Credits
CNST 1730	Construction Print Reading	2
CNST 2130	Construction Methods, Materials and Equipment	3
CNST 2631	Construction Management Systems	3
CNST 2990	Construction Estimating & Cost Analysis	3

APPLIED INDUSTRIAL TECHNOLOGY
(Sheet Metal Working) (Continued)

Business & Supervision Electives		Credits
BADM-1020	Introduction to Business	3
BADM-1121	Principles of Management & Organizational Behavior	4
BADM-1210	Labor-Management Relations	3
BADM-2150	Business Law	4
BADM-2240	Negotiations	3

Entrepreneur Electives		Credits
BADM-1300	Small Business Management	4
BADM-2450	New Business Development	5
BADM-2470	Marketing Techniques for Small Business	3

SHEET METAL WORKING
APPRENTICESHIP PROGRAM
Certificate of Proficiency

   Students must be working in a registered apprenticeship program in conjunction with the U. S. Department of Labor, Bureau of Apprenticeship and Training. The 5 year apprenticeship program provides training toward journey level certification and the technical component toward the Associate of Applied Science degree with a concentration in Sheetmetal Working. Sheet Metal Workers make, install, and maintain heating, ventilation, and air-conditioning duct systems; roofs; siding; rain gutters; downspouts; skylights; restaurant equipment; outdoor signs; railroad cars; tailgates; customized precision equipment; and many other products made from metal sheets. They also may work with fiberglass and plastic materials.

Apprenticeship Coordinator – 216-987-3295

Program Admission Requirements:
*   Participant must be working in an apprenticeship in conjunction with the U.S. Dept. of Labor, Bureau of Apprenticeship and Training.

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1.   Communicate verbally, nonverbally and in writing using appropriate technology with co-workers, other trades, design professionals, suppliers and end users in order to complete projects in a timely fashion in accordance with local codes and job specifications.

2.   Working independently or as part of a team in a respectful and professional manner, resolving conflicts when needed, in order to complete a project in a timely fashion.

3.   Exhibit pride of craftsmanship, reliability and actively engage in all aspects of the project and take opportunities to upgrade skills.

4.   Recognize hazardous materials and conditions, wear appropriate personal protective equipment and take preventative measures following federal, state, local laws, policies and procedures.

5.   Layout and fabricate sheet metal items safely using shop equipment, hand and power tools, and computerized equipment and apply basic math to meet job specifications in accordance with Sheet Metal Air Condition Contractors National Association (SMACNA).

6.   Install sheet metal items safely using hand and power tools, ladders, scaffolds and lifting devices, and applying basic math to meet job specifications in accordance with SMACNA standards.

7.   Read and interpret blueprints, specifications and shop drawing in order to fabricate and install various sheet metal components.

8.   Startup HVAC equipment and service accordingly to meet project specification.

9.   Safely test and balance an installed system to ensure that it is operating to design specifications.

10.   Be certified in OSHA 10 and OSHA 30 Construction Safety and Health. Be prepared for the following certifications:
     a.   EPA Section 608 Certification
     b.   AWSD1.1 and AWSD1.9 Welding Certifications
     c.   HVAC Firelife Safety Level1 Technician Certification

Suggested Semester Sequence

First Semester		Credits
ATGL-1630	Basic Welding	2
ATSM-1010	Benefits Management	1
ATSM-1020	Trade History	1
ATSM-1030	Layout and Fabrication I	2
ATSM-1040	OSHA 16 Hour Safety Training	1
ATSM-1230	Field Installation	3
ATSM-2310	Refrigeration I	1
ATSM-xxxx	Sheetmetal Working elective	2
		13

Second Semester		Credits
ATCM-1340	OSHA Standards for the Construction Industry	3
ATGL-2340	Advanced Welding	2
ATPL-2350	Electricity for Plumbers	2
ATSM-1220	Layout and Fabrication II [1]	2
ATSM-2330	Layout and Fabrication III [1]	3
ATSM-2340	Advanced Field Installation	3
ATSM-2420	Refrigeration II	2
		17

	PROGRAM TOTAL	30

[1]Consecutively scheduled courses.

APPLIED INDUSTRIAL TECHNOLOGY
(Sign and Display)
   This program is currently on hold. Students interested in this area may apply to the Painter's Apprenticeship Program.

APPLIED INDUSTRIAL TECHNOLOGY
(Teledata)
   This program is currently on hold and not accepting any students.

AUTOMOTIVE TECHNOLOGY

Associate of Applied Science degree in Automotive Technology

Students are taught to diagnose, correct and repair electrical, fuel, emissions and mechanical problems found in today's modern automobile through classroom, laboratory and field experience. Graduates are prepared for entry level positions as technicians in fleet service, manufacturer's dealerships, national oil company and transmission repair facilities or independent garages. Course work prepares student for the National Institute for Automotive Service Excellence (ASE) automotive tech tests. The AUTO Program is certified by the National Automotive Technicians Education Foundation (NATEF) in all eight ASE categories. The Automotive Service Educational Program (ASEP) requires alternating school and General Motors dealership work experience sessions. In addition, ASEP students need to complete AUTO-1950 and AUTO-1960. Please call the Automotive Technology department for more information.

Program Manager - 216-987-5330

Program Admission Requirements:
- High School Diploma/GED not required, but highly recommended
- Dealership sponsor required for ASEP program
- ASEP student handbooks contain educational and worksite requirements for continuation in program

Other Information:
- ASEP students need to complete five field experience credits: AUTO-1940, AUTO-1950, AUTO-1960, AUTO-2940, and AUTO-2950.
- Enrollment in individual courses for students who are not degree majors is permitted.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Read repair orders, write service recommendations, obtain pertinent vehicle information, and document all problems.

2. Work independently and professionally and as a member of an automotive team.

3. Use basic math and appropriate tools and equipment to perform maintenance and basic repair services according to industry standards in a safe manner.

4. Assist in diagnosis and perform mechanical repairs using appropriate tools and equipment according to industry standards in a safe manner.

5. Diagnose and perform complex mechanical and electrical repairs using appropriate tools and equipment according to industry standards in a safe manner.

6. Apply basic business and management practices (marketing, inventory control, accounting, customer relations, employee relations) to the automotive environment.

7. Identify, interpret and document customer concerns and determine necessary actions. Listen and respectfully communicate with customers, co-workers and managers.

Suggested Semester Sequence

First Semester		Credits
AUTO-1010	Shop Safety and Lab Procedures	1
AUTO-1050	Numerical Applications in Automotive Service	3
AUTO-1100	Introduction to Automotive Service Procedures	2
AUTO-1350	Manual Transmission and Drivetrain	2
AUTO-1501	Automotive Electrical Fundamentals	2
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
		16

Second Semester		Credits
AUTO-1300	Automotive Engines	3
AUTO-1400	Automotive Alignment, Steering and Suspension	3
AUTO-1450	Automotive Braking Systems	3
AUTO-1940	Automotive Field Experience I	1
MATH-1xxx	1000-level MATH course or higher	3
Arts & Hum (see AAB/AAS degree requirements)		3
		16

Third Semester		Credits
AUTO-2350	Automotive HVAC	2
AUTO-2400	Engine Performance	3
AUTO-2470	Automotive Electrical Systems	2
AUTO-2940	Automotive Field Experience IV	1
BADM-1020	Introduction to Business	3
ECON-1210	Survey of Economics	3
SPCH-1010	Fundamentals of Speech Communication … OR	3
SPCH-101H	Honors Fundamentals of Speech Communication	
		17

Fourth Semester		Credits
AUTO-2300	Automatic Transmissions … OR	3
AUTO-2600	Hybrids and Alternative Fuel Systems … OR	
AUTO-2650	Hybrid Vehicle Safety and Service	
AUTO-2450	Automotive Electronic Engine Controls	3
AUTO-2500	Automotive Electrical Diagnosis	2
AUTO-2701	Automotive Service Operations	3
AUTO-2950	Automotive Field Experience V [C] [3]	1
Arts & Hum/Soc & Beh Sci (see AAS Degree requirements)		3
		15

| | PROGRAM TOTAL | 64 |

[3]ASEP Students must also complete AUTO-1950 & 1960.

[C] = Capstone course.

AUTOMOTIVE TECHNOLOGY
Certificate of Proficiency

This Certificate of Proficiency in Automotive Technology provides students with classroom and laboratory experience and prepares students for employment in the auto service industry.

Degree: Students may apply credits toward the Automotive Technology Degree program

Program Admission Requirements:
- High School Diploma/GED highly recommended, but not required
- Contact the Automotive Technology department at 216-987-5330.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Read repair orders, write service recommendations, obtain pertinent vehicle information, and document all problems.

2. Work independently and professionally and as a member of an automotive team.

3. Use basic math and appropriate tools and equipment to perform maintenance and basic repair services according to industry standards in a safe manner.

4. Assist in diagnosis and perform mechanical repairs using appropriate tools and equipment according to industry standards in a safe manner.

Suggested Semester Sequence

First Semester		Credits
AUTO-1010	Shop Safety and Lab Procedures	1
AUTO-1050	Numerical Applications in Automotive Service	3
AUTO-1100	Introduction to Automotive Service Procedures	2
AUTO-1350	Manual Transmission and Drivetrain	2
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	_
		14

Second Semester		Credits
AUTO-1300	Automotive Engines	3
AUTO-1400	Automotive Alignment, Steering and Suspension	3
AUTO-1450	Automotive Braking Systems	3
AUTO-1501	Automotive Electrical Fundamentals	2
BADM-1020	Introduction to Business	3
SPCH-1010	Fundamentals of Speech Communication … OR	3
SPCH-101H	Honors Fundamentals of Speech Communication	_
		17
	PROGRAM TOTAL	31

AUTOMOTIVE MAINTENANCE AND GENERAL SERVICE
Short-Term Certificate

The Short-Term Certificate in Automotive Maintenance and General Service prepares students for entry level positions in the auto service industry as assistant technicians, maintenance technicians or general service technicians. Training is provided through a combination of classroom instruction and laboratory experience.

Program Manager - 216-987-5330

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Read repair orders, write service recommendations, obtain pertinent vehicle information, and document all problems.

2. Work independently and professionally and as a member of an automotive team.

3. Use basic math and appropriate tools and equipment to perform maintenance and basic repair services according to industry standards in a safe manner.

Suggested Semester Sequence

First Semester		Credits
AUTO-1100	Introduction to Automotive Service Procedures	2
AUTO-1400	Automotive Alignment, Steering and Suspension	3
AUTO-1450	Automotive Braking Systems	3
AUTO-1501	Automotive Electrical Fundamentals	2
		10
	PROGRAM TOTAL	10

BUSINESS MANAGEMENT

Associate of Applied Business degree in Business Management

The Associate of Applied Business Degree in Business Management is designed to help you become an effective manager of projects as well as personnel. The business management curriculum will enable you to advance personally in a business environment while you contribute to your company's goals and objectives. Your courses will familiarize you with general management theory and practice, as well as critical knowledge in accounting, marketing, purchasing, economic and legal aspects of the modern business world. Prepare yourself for a business related career or advancement in industrial or consumer product or retail setting.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use listening, non-verbal, written, and verbal communication skills, utilizing appropriate technology with internal and external customers, to meet the organizations objectives.

2. Develop and maintain effective working relationships within a team or organization among diverse people.

3. Provide quality and timely customer service that ensures customer satisfaction to both internal and external customers.

4. Effectively utilize personal management skills such as project management, organization, leadership, professionalism, and time management to meet or exceed the organization's objectives.

5. Use various systems and software to maximize the efficiency of the organization.

6. Use problem solving tools and principles of quality to identify and enhance an organization's performance.

7. Apply general math and accounting skills to prepare, record, and track revenue and expenditures and other performance measures.

8. Apply basic knowledge of business principles and practices to achieve competitive advantage in the global marketplace.

Suggested Semester Sequence

First Semester		Credits
BADM-1020	Introduction to Business	3
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
MATH-1250	Contemporary Mathematics or higher [1]	4
		13

Second Semester		Credits
ACCT-1310	Financial Accounting	4
BADM-1121	Principles of Management and Organizational Behavior	4
ECON-2620	Principles of Microeconomics	4
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II	
		15

Third Semester		Credits
BADM-1210	Labor-Management Relations	3
BADM-2010	Business Communications …OR	3
BADM-201H	Honors Business Communications	
BADM-2160	Introduction to Purchasing	3
ECON-2610	Principles of Macroeconomics	4
MARK-2010	Principles of Marketing	3
		16

Fourth Semester		Credits
BADM-2110	Production/Operations Management	3
BADM-2150	Business Law	4
BADM-2330	Human Resource Management	3
BADM-2501	Business Strategies [C]	3
PHIL-2060	Business Ethics	3
		16

	PROGRAM TOTAL	60

[1]MATH-1800-1820 may not be used to meet this requirement. MATH-1270 or higher is recommended for students planning to transfer.

[C] = Capstone course.

BUSINESS MANAGEMENT
(Human Resources Management)

Associate of Applied Business degree in Business Management with a concentration in Human Resources

Students experience and develop Human Resource generalist capabilities through this competency-driven and applications-based Human Resource program. By combining a dynamic market designed and driven Human Resource concentration with a well-rounded Business Management degree, the student is preparing to become a marketable Human Resource practitioner with a business partner orientation. Those already in the function can develop and advance their career potential through this up-to-date program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Ability to work with a computer and operating systems, such as Windows and Microsoft Office (Word, Excel, PowerPoint, Access).

2. Apply an effective written and verbal communication strategy to meet the organization's objectives.

3. Effectively utilize personal management skills such as organization, leadership, professionalism, time management and ethics.

4. Apply general math skills to perform basic organizational ratios (return on investments, sales per employee, profit per employee, debt/equity) and understand measures and importance of positive returns.

5. Develop effective working relationships within a team or organization among diverse people.

6. Apply basic knowledge of business and economic principles and structures to achieve competitive advantage in a global marketplace in a socially responsible manner.

7. Apply basic employment law to accomplish business objectives and remain in compliance with all applicable laws.

8. Consider the differences in employee relations in a non-union vs. union environment when advancing human resource concepts/procedures such as hiring, performance management, discipline, termination, training and safety.

9. Apply general human resource knowledge in areas such as strategic planning, leadership, record keeping, and health and safety to drive organizational performance.

10. Identify core competent skills needed to develop a strong, competitive organization through people.

11. Administer the benefit and compensation system conforming to current laws, regulations, and marketplace.

12. Maintain staffing by effectively sourcing, recruiting and selecting qualified candidates for open positions in order to meet required standards.

Suggested Semester Sequence

First Semester		Credits
BADM-1020	Introduction to Business	3
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
MATH-1250	Contemporary Mathematics or higher [1]	4
SPCH-1010	Fundamentals of Speech Communication	3
		16

Second Semester		Credits
ACCT-1310	Financial Accounting	4
BADM-1121	Principles of Management and Organizational Behavior	4
ECON-2620	Principles of Microeconomics	4
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II	
		15

Third Semester		Credits
BADM-1210	Labor-Management Relations	3
BADM-2330	Human Resource Management	3
ECON-2610	Principles of Macroeconomics	4
MARK-2010	Principles of Marketing	3
PSY-1050	Introduction to Industrial/Organizational Psychology	3
		16

Fourth Semester		Credits
BADM-2110	Production/Operations Management	3
BADM-2150	Business Law	4
BADM-2340	Human Resource Law and Application	3
BADM-2390	Advanced Human Resource Practices [C]	3
PL-1460	Workers' Compensation Law	3
		16

	PROGRAM TOTAL	63

[1]MATH-1800-1820 may not be used to meet this requirement. MATH-1270 or higher recommended for students planning to transfer.

[C] = Capstone course.

BUSINESS MANAGEMENT (International Business)

Associate of Applied Business degree in Business Management with a concentration in International Business

Designed to prepare students for the unique requirements of doing business in a global marketplace. Includes export activities, global business and marketing strategies, foreign manufacturing logistics and international communications etiquette. Courses are taught by experts in International Business and feature guest lecturers, interactive role play and plenty of hands-on activities. Maximizes student opportunities for employment in any aspect of business in the U.S. or elsewhere.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use listening, verbal, non-verbal, written, and appropriate cross-cultural communication skills, utilizing appropriate technology with internal and external stakeholders, to meet a global organization's objectives.

2. Apply intercultural sensitivity and knowledge of global business practices and protocols to develop and maintain effective working relationships among diverse people.

3. Provide quality and timely customer service that ensures customer satisfaction to both internal and external customers.

4. Effectively utilize personal management skills such as project management, organization, leadership, professionalism, networking and time management to meet or exceed an organization's global objectives.

5. Use various international systems, certification, standards, and software to maximize the efficiency of the global trade environment.

6. Identify and use problem solving tools and principles of quality to identify and resolve problems in a timely manner that enhances a global organization's performance on a global scale.

7. Apply general math, metric, currency and accounting skills to prepare, record and track revenue and expenditures and other performance measures in a global environment.

8. Apply knowledge of global concepts including geography, current affairs, history, travel and infrastructures to assist an organization's international strategy.

9. Conduct market research to support an organization's global marketing programs/initiatives.

10. Support management of an organization's transportation, warehouse, distribution and logistics operations.

11. Apply knowledge of international financial management to support purchasing/sales products and services.

Suggested Semester Sequence

First Semester		Credits
BADM-1020	Introduction to Business	3
BADM-2160	Introduction to Purchasing	3
ECON-2620	Principles of Microeconomics	4
ENG-1010	College Composition I …OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
		16

Second Semester		Credits
ACCT-1310	Financial Accounting	4
BADM-1121	Principles of Management and Organizational Behavior … OR	3-4
BADM-2110	Production/Operations Management	
MARK-2010	Principles of Marketing	3
MATH-1250	Contemporary Mathematics or higher [1]	4
		14 - 15

Third Semester		Credits
ACCT-1340	Managerial Accounting	4
BADM-2600	Introduction to World Trade	3
ECON-2610	Principles of Macroeconomics	4
DEGR-xxxx	Select Foreign Language elective [2]	3 - 4
		14 - 15

Fourth Semester		Credits
BADM-2150	Business Law	4
BADM-2790	International Business Strategy and Application [C]	4
BADM-xxxx	Business Elective	3
BADM-xxxx	Business Elective	3
DEGR-xxxx	Select Foreign Language elective	3 - 4
		17 - 18

	PROGRAM TOTAL	61 - 64

[1]MATH-1800-1820 may not be used to meet this requirement; MATH-1270 or higher is recommended for students planning to transfer.

[2]Foreign language electives should be selected in the same language. Department approval required to select another foreign language. American Sign Language courses are not foreign language elective options for this degree.

[C] = Capstone course.

ELECTIVES
BADM electives
(select a minimum of 6 credits)

BADM 2510	Import/Export Documentation and Transportation	1
BADM 2520	Operational Issues in International Business	2
BADM 2530	International Sourcing and Logistics	2
BADM 2620	International Trade Finance and Insurance	2
BADM 2630	Legal Issues in International Business	1
BADM 2710	Global Marketing	2
BADM 2720	International Market Research	2
BADM 2730	Channels of Distribution in International Markets	1

BUSINESS MANAGEMENT
(International Business)

Post-Degree Professional Certificate

   The certificate program in international business prepares seasoned professionals and university graduates for the dynamic world of global business. Students learn concepts and practices that prepare them for export operations, sales, distribution, international banking and other aspects of international business. In addition to these critical, "applied skills," students will develop an international perspective and empathy for different cultures. Graduates of this program will be prepared for careers with trading houses, banks, multinational corporations, freight forwarders, transportation companies, governments, international institutions and any firm with a strategic interest in global business. Courses will also prepare the student to sit for the NASBITE National Certification in International Business.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply knowledge of other culture's values, perception, manners and social structures to effectively communicate, work with and negotiate in a global marketplace.
2. Apply knowledge of cultural, ethical, and legal issues in global business management.
3. Develop global business strategies, incorporating and recognizing international environmental factors.
4. Apply and manage international marketing while mixing elements to generate profit.
5. Manage transportation, distribution, and documentation for international sales and shipments.
6. Manage legal entities, foreign exchanges, revenue recognition, and risks and taxes in international finance.
7. Sit for the National Certification in International Business (NMASBITE).

Suggested Semester Sequence

Summer Session		Credits
BADM-2600	Introduction to World Trade	3
		3

First Semester		Credits
BADM-2160	Introduction to Purchasing	3
BADM-2510	Import/Export Documentation and Transportation	1
BADM-2520	Operational Issues in International Business	2
BADM-2610	Cross Cultural Communications	1
BADM-2630	Legal Issues in International Business	1
BADM-2710	Global Marketing	2
BADM-2720	International Market Research	2
ECON-2620	Principles of Microeconomics	4
		16

Second Semester		Credits
BADM-2530	International Sourcing and Logistics	2
BADM-2620	International Trade Finance and Insurance	2
BADM-2730	Channels of Distribution in International Markets	1
BADM-2790	International Business Strategy and Application	4
MARK-2010	Principles of Marketing	3
		12
	PROGRAM TOTAL	31

BUSINESS MANAGEMENT
(Public Administration)

Certificate of Proficiency

   The Certificate of Proficiency in Public Administration targets a significant and growing market niche. Public Administration has unique characteristics that are significantly different from the Private Sector. With a dwindling tax base and an increasing number of levy defeats, the Public Sector is expected to provide the same level of services with less revenue. The goal of this certificate is to provide the student with the basic foundation skills and knowledge to assist in managing more efficiently, develop independent revenue streams, initiate cost reduction methods and increase tax payers' satisfaction.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use listening, verbal, non-verbal and written communication skills utilizing appropriate technology with internal and external stakeholders to meet the organization's objectives.
2. Develop and maintain effective working relationships within a team or organization among diverse people.
3. Provide quality and timely customer service that ensures customer satisfaction.
4. Effectively utilize personal management skills such as project management, organization, leadership, professionalism, and time management to meet or exceed the organization's objectives.
5. Use various systems and software to maximize the efficiency of the organization.
6. Use problem solving tools and principles of quality to identify and enhance an organization's performance.
7. Apply general math and accounting skills to prepare, record, and track revenue and expenditures and other performance measures.
8. Apply basic knowledge of business principles and practices to achieve competitive advantage in the global marketplace.
9. Apply knowledge of various governmental subdivisions to provide effective and efficient service delivery that meets all applicable laws and policies and regulations of the agency.

Suggested Semester Sequence

First Semester		Credits
ACCT-1310	Financial Accounting	4
BADM-1020	Introduction to Business	3
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
POL-1020	State and Local Government	3
		16

BUSINESS MANAGEMENT (Public Administration) (Continued)

Second Semester		Credits
ACCT-2500	Government/Non-Profit Accounting… OR	4
HS-2530	Proposal Writing and Program Development	
BADM-1121	Principles of Management and Organizational Behavior	4
BADM-2400	Public Administration	3
BADM-2010	Business Communications … OR	3
BADM-201H	Honors Business Communications … OR	
BADM-2160	Introduction to Purchasing … OR	
BADM-2330	Human Resource Management	
MARK-2010	Principles of Marketing	3
		15-17
	PROGRAM TOTAL	31-33

BUSINESS MANAGEMENT
(Small Business Management)

Associate of Applied Business degree in Business Management with a concentration in Small Business Management

This program is designed for those who aspire to be entrepreneurs, as well as for those already operating a small business. Fundamentals of entrepreneurship are emphasized. A solid management foundation is provided.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Raise capital, effectively manage financial resources, and develop policies and procedures to ensure financial goals are met.

2. Communicate verbally and in writing to produce letters, proposals and e-mails to clients, colleagues and other professionals.

3. Develop and create a human resource culture that protects the overall integrity of the organization through consistent practices that influence the human aspect of operating a business.

4. Develop a clear understanding of various business legal implications to better protect the company's physical and intellectual properties.

5. Develop a clearly written document that articulates/identifies the short and long term direction of the company with the primary purpose of sustaining its future growth.

6. Identify roles, goals, procedures and relationships for the purpose of organizational efficiency.

7. Commit to self-development and life-long learning in all facets of starting and operating an entrepreneurial enterprise such as time management, continuing education and balancing business and personal life.

8. Move product or service by creating, developing and recognizing your unique selling point.

9. Perform and interpret market research to determine the demand and feasibility for product or service.

10. Identify and develop flowchart (process) to move sales order to fulfillment within organizational capacity.

Suggested Semester Sequence

First Semester		Credits
BADM-1020	Introduction to Business	3
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
MATH-1250	Contemporary Mathematics or higher [1]	4
SPCH-1010	Fundamentals of Speech Communication	3
		16

Second Semester		Credits
ACCT-1310	Financial Accounting	4
BADM-1121	Principles of Management and Organizational Behavior	4
ECON-2620	Principles of Microeconomics	4
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II	
		15

Third Semester		Credits
BADM-1300	Small Business Management	4
BADM-2010	Business Communications …OR	3
BADM-201H	Honors Business Communications	
ECON-2610	Principles of Macroeconomics	4
MARK-2010	Principles of Marketing	3
		14

Fourth Semester		Credits
BADM-2150	Business Law	4
BADM-2450	New Business Development [C]	5
BADM-2470	Marketing Techniques for Small Business	3
PHIL-2060	Business Ethics	3
		15
	PROGRAM TOTAL	60

[1]MATH-1800-1819/2800-2819 & 1820/2820 may not be used to meet this requirement. MATH-1270 or higher recommended for students planning to transfer.

C = Capstone course.

BUSINESS MANAGEMENT
(Strategic Leadership)

Short-Term Certificate

The Leadership Certificate is a structured program that is designed to provide a coherent selection of courses for the development and growth of leadership skills that can be applied in the students' community and workplace. The certificate program provides a coherent selection of courses for the development of leadership knowledge and skills. Also, the program provides valuable instruction for leaders and potential leaders who are members of neighborhood, civic and community organizations. The strategic leadership certificate focuses on increasing strategic management skills.

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate appropriate and meaningful ideas, information results and feedback to internal/external stakeholders throughout organizational structures using appropriate medium/methodologies.

2. Apply emotional intelligence, problem solving and conflict resolution skills to positively influence business goals and objectives, in a fair and constructive manner, while remaining flexible and being sensitive to cultural and interpersonal differences in a dynamic environment.

3. Employ ethical behavior, strong work ethics and a positive attitude in accordance with organizational standards and policies.

4. Apply business theory, analysis and research for effective decision making.

5. Strategically align resources and inspire and empower others to achieve a shared vision.

6. Utilize strategic thinking, problem solving, planning and organizing skills in order to efficiently direct and control time, material, human and financial resources.

Suggested Semester Sequence

First Semester		Credits
BADM-1050	Professional Success Strategy	3
BADM-1060	Leadership Seminar	1
BADM-1070	Introduction to Project Management	3
BADM-1121	Principles of Management and Organizational Behavior	4
		11

Second Semester		Credits
BADM-2020	Leadership Theory	3
BADM-2030	Management Development	3
BADM-2040	Strategic Leadership …OR	3
PHIL-2060	Business Ethics	
		9

	PROGRAM TOTAL	20

CAPTIONING AND COURT
REPORTING

Associate of Applied Business degree in Captioning and Court Reporting

Within the legal field, court reporters are entrusted to record everything said in court, at depositions, and in legal meetings. Reporters use computer technology and specialized software in their work today. Thus, "realtime" court reporters now find many applications for their skills outside the legal field in areas such as captioning and computer access real time translations (CART) providing. This program provides the student with skills required to meet the challenges and opportunities available to court reporters in the modern workplace.

Program Admissions Requirements:
- High School Diploma/GED
- Eligibility for ENG-1010
- Recommend students take C&CR-1000 in the spring or summer prior to entering the program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Adhere to ethical standards and requirements while completing work in a timely manner.

2. Utilize appropriate reference materials (medical dictionaries, PDR, Internet) and employ language skills (punctuation, spelling, rules of grammar) in the production of transcribed materials.

3. Work independently and apply business procedures to maintain a freelance practice.

4. Write 225 wpm with 95% accuracy and apply real-time technology skills.

5. Effectively apply the use of specialized vocabulary (business, sports, meteorology, politics) as found in current events to capture the spoken word in real time writing.

6. Apply appropriate courtroom procedures to professional work.

7. Maintain a professional appearance and demeanor in a legal setting while adhering to ethical standards and requirements and completing work in a timely manner.

8. Prepared to sit for the Registered Professional Reporter (RPR) Certification Exam.

Suggested Semester Sequence

First Semester			Credits
C&CR-1000	Introduction to Court Reporting (a) …	OR	1
C&CR-1100	Introduction to Voice Captioning (b)		
C&CR-1300	Realtime Theory I (a) … OR		4
C&CR-1200	Voicewriting I [1] (b) … AND		2
C&CR-1210	Voicewriting II [1] (b)		2
C&CR-1350	Legal Terminology		3
ENG-1010	College Composition I … OR		3
ENG-101H	Honors College Composition I		
			11

CAPTIONING AND COURT REPORTING (Continued)

Second Semester		Credits
C&CR-1330	Realtime Theory II (a) … AND	2
C&CR-1340	Realtime Theory III (a) … OR	2
C&CR-1220	Voicewriting III (b)	4
C&CR-1521	Realtime Theory Reinforcement	2
C&CR-2200	Medical Terminology for Captioning and Court Reporting	3
C&CR-2350	Editing Legal Documents	2
MATH-1xxx	1000-level MATH course or higher	3
		14

Summer Semester		Credits
C&CR-1450	Speedbuilding and Transcription at 140 WPM	2
C&CR-1600	Court Reporting Technology	5
C&CR-1610	Speed Development I	1
C&CR-xxxx	Any C&CR elective course	1
CJ-1120	Criminal Court Procedure	2
		11

Third Semester		Credits
C&CR-1620	Speed Development II	1
C&CR-2300	Court Procedures	3
C&CR-2400	Speedbuilding and Transcription at 180 WPM	2
C&CR-2601	Technical Terminology I … OR	3
C&CR-2651	Technical Terminology II	
Arts & Hum (see AAB/AAS degree requirements)		3
Social & Beh Sci (See AAB/AAS degree requirements)		3
		15

Fourth Semester		Credits
C&CR-1630	Speed Development III	1
C&CR-2450	Speedbuilding and Transcription at 225 WPM	2
C&CR-2470	Advanced Technology [C]	3
C&CR-2840	Internship	1
BADM-1300	Small Business Management	4
C&CR-xxxx	Any C&CR elective course	1
Communication…(See AAB Degree requirements)		3
		15

	PROGRAM TOTAL	66

OPTIONS

(a) Court Reporting		Credits

Court Reporting Option teaches students to utilize stenotype machines and software.

C&CR 1000	Introduction to Court Reporting	1
C&CR 1300	Realtime Theory I	4
C&CR 1330	Realtime Theory II	2
C&CR 1340	Realtime Theory III	2

(b) Voicewriting		Credits

Voicewriting Option teaches students to utilize voice-recognition software and technology. Voicewriting technology enables users to create and edit documents, send email, access the internet and perform other functions in a hands-free environment.

C&CR 1100	Introduction to Voice Captioning	1
C&CR 1200	Voicewriting I	2
C&CR 1210	Voicewriting II	2
C&CR 1220	Voicewriting III	4

[1]Consecutive eight week course.

[C] = Capstone course.

CAPTIONING AND CART PROVIDING
Short-Term Certificate

Captioners and CART (computer-assisted realtime translation) Providers use steno or voicewriting technology to provide access to the hearing impaired and disabled populations by displaying the text of speakers on computers and television. Graduates can work as an entry-level CART provider or broadcast captioner.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Write three five-minute literary takes at 180 wpm with 96 percent verbatim accuracy.

2. Write three 15-minute Literary broadcast takes at 180 wpm with 96 percent verbatim.

3. Effectively apply the use of dictionary maintenance techniques in the CART and captioning environments.

4. Adhere to ethical standards and requirements while completing work in a timely manner.

5. Utilize CART and captioning equipment for realtime translation.

6. Prepared to sit for the Certified Broadcast Captioner (CBC) certification exam and Certified Cart Provider (CCP) certification exam.

Program Admissions Requirements:
- Completion of the short-term certificate in Court Reporting Technologies or RPR Certification or completion of an entrance examination.

Suggested Semester Sequence

First Semester		Credits
C&CR-1610	Speed Development I … OR	1
C&CR-1620	Speed Development II … OR	
C&CR-1630	Speed Development III	
C&CR-2400	Speedbuilding and Transcription at 180 WPM	2
C&CR-2480	Using Captioning Technology	3
C&CR-2510	CART Production	3
		9

Second Semester		Credits
C&CR-1610	Speed Development I [1] … OR	1
C&CR-1620	Speed Development II … OR	
C&CR-1630	Speed Development III	
C&CR-2450	Speedbuilding and Transcription at 225 WPM	2
C&CR-2520	Captioning Production	3
C&CR-2601	Technical Terminology I	3
C&CR-2651	Technical Terminology II	3
		12

Third Semester		Credits
C&CR-2550	Writing for Captioning and CART	2
C&CR-2910	Internship for Captioning and CART	1
		3

	PROGRAM TOTAL	24

[1]Must take two different speed development courses to meet program requirements.

COURT REPORTING TECHNOLOGIES
Short-Term Certificate

A student receiving the Short-Term Certificate can work as a scopist or transcriptionist for a court reporting firm, doctor's office, or as an independent contractor.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Adhere to ethical standards and requirements while completing work in a timely manner.

2. Utilize appropriate reference materials (medical dictionaries, PDR, Internet (and employ language skills (punctuation, spelling, rules of grammar) in the production of transcribed materials.

3. Work independently and apply business procedures to maintain a freelance practice.

4. Utilize CAT software and knowledge of stenotype to produce transcripts and write at a minimum speed of 140 wpm with 95% accuracy.

Suggested Semester Sequence

First Semester		Credits
C&CR-1300	Realtime Theory … OR	2-4
C&CR-1200	Voicewriting I [1] … AND	
C&CR-1210	Voicewriting II [1]	
C&CR-1350	Legal Terminology	3
		7

Second Semester		Credits
C&CR-1330	Realtime Theory II … AND	2-4
C&CR-1340	Realtime Theory III … OR	
C&CR-1220	Voicewriting III	
C&CR-2350	Editing Legal Documents	2
		6

Third Semester		Credits
C&CR-1450	Speedbuilding and Transcription at 140 WPM … AND	2
C&CR-1610	Speed Development I … OR	1
C&CR-1620	Speed Development II … OR	
C&CR-1630	Speed Development III	
C&CR-1600	Court Reporting Technology	5
C&CR-2200	Medical Terminology for Captioning & Court Reporting	3
		9 - 11

PROGRAM TOTAL   22 - 24

[1]Consecutive eight week course.

CONFLICT RESOLUTION AND PEACE STUDIES
Short-Term Certificate

This certificate will provide the student with the theory and skills of conflict resolution and with an opportunity to implement this knowledge in the community.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Analyze and assess conflict in all of its stages and manifestations in order to intervene effectively and ethically to successfully reduce, manage, or resolve conflict.

2. Listen and utilize nonverbal, emotional and cultural/personal perspectives to validate each party's issue/interest, to facilitate de-escalation and engagement to move towards resolution while maintaining a neutral process.

3. Facilitate community building by engaging stakeholder representative through collaboration and teamwork while maintaining a safe and objective environment.

4. Apply problem-solving techniques and knowledge of social/emotional intelligence to analyze and evaluate the roots of conflict, (including structural, cultural, emotional and economical differences), and their effects on individuals to create and sustain a peaceful community.

Suggested Semester Sequence

First Semester		Credits
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
POL-1040	Introduction to Peace and Conflict Studies	3
DEGR-xxxx	Select 1 or 2 electives from below list	3 - 6
		9 - 12

Second Semester		Credits
POL-2040	Conflict Resolution Skills	3
DEGR-xxxx	Select 1 or 2 electives from below list	3 - 6
		6 - 9

Summer Semester		Credits
POL-2140	Implementing Peace Studies and Conflict Management Theories and Practices with Service Learning	3
DEGR-xxxx	Select 1 elective from below list	3
		6

PROGRAM TOTAL   21 - 27

ELECTIVES

Electives		Credits
Select from the below list of courses to fulfill elective requirements.		
ANTH-1010	Cultural Anthropology	3
BADM-1121	Principles of Management and Organizational Behavior	4
BADM-1210	Labor-Management Relations	3
HUM-1020	The Individual in Society	3
PHIL-101H	Honors Introduction to Philosophy	3
PHIL-2020	Ethics	3
PHIL-202H	Honors Ethics	3
POL-2050	Study Abroad in Peace and Conflict Resolution	3

CONFLICT RESOLUTION AND PEACE STUDIES (Continued)

PSY-1060	Cross-Cultural Competency for Health Care Providers	1
PSY-2020	Life Span Development	4
PSY-202H	Honors Life Span Development	4
PSY-2060	Adolescent Psychology	3
PSY-2100	Introduction to Aging	3
SOC-2010	Social Problems	3
SOC-201H	Honors Social Problems	3
SOC-2550	Race and Ethnic Relations	3
SPCH-1000	Fundamentals of Interpersonal Communication	3
SPCH-101H	Honors Fundamentals of Speech Communication	3
WST-1510	Introduction to Women`s Studies	3
WST-151H	Honors Introduction to Women's Studies	3
WST-200H	Honors Women and Reform	3

CONSTRUCTION ENGINEERING TECHNOLOGY

Associate of Applied Science degree in Construction Engineering Technology

This program prepares students for the construction industry with positions in scheduling, estimating, sales & marketing, assistant project management, and assistant field superintendents. The program includes comprehensive study in contract documents, construction materials & methods, scheduling, and estimating for residential and light commercial building. Graduates can be employed with construction contractors, engineering/architectural firms, building material suppliers, public building agencies, or they can transfer into university programs in construction engineering /management.

Program Admission Requirements:
- High School Diploma/GED
- Eligibility for ENG-1010
- Eligibility for MATH-1280
- Complete the following: CNST-1281, CNST-1730, and IT-1010

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Recognize purpose for building information modeling within building design.

2. Monitor project work for compliance with contract documents.

3. Perform basic surveying tasks including layout of vertical and horizontal alignments, comprehend the underlying mathematical principles and apply the information obtained.

4. Interpret the intent of plans and specifications as they relate to the various aspects of the construction project from the perspective of the owner, design professional, construction manager, and contractor and have the associated computer proficiencies.

5. Apply the principles of project management process, innovation and technology to effectively identify characteristics of project delivery systems, perform contract document tasks, and implement project processes for successful project completion.

6. Use critical path method to organize project requirements into logical inter-related groupings that represent consensus of project stakeholders to develop a management tool that communicates project status using industry standard technology.

7. Apply sound estimating and cost management principles, and use industry standard computer technology to develop and maintain an organized management tool that effectively projects and communicates the project's financial status.

8. Use critical thinking skills to anticipate, identify, respond to, and resolve problems.

9. Use verbal and written skills with technological tools to clearly and effectively communicate, using appropriate protocols to project stakeholders.

Suggested Semester Sequence

First Semester		Credits
CNST-1281	Construction Engineering Orientation	3
CNST-1730	Construction Print Reading	2
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	3
MATH-1280	Advanced Intermediate Algebra [1]	5
		16

Second Semester		Credits
ACCT-1310	Financial Accounting	4
CNST-1410	Architectural CAD I	3
CNST-2130	Construction Methods, Materials and Equipment	3
MATH-1510	Trigonometry or higher … OR	3
MATH-151H	Honors Trigonometry	
PHYS-1210	College Physics I	4
		17

Third Semester		Credits
CNST-2110	Basic Survey Practices	3
CNST-2200	Architectural Building Information Modeling	3
CNST-2210	Mechanical & Electrical Systems	3
CNST-2990	Construction Estimating & Cost Analysis	3
ENG-2151	Technical Writing	3
MET-1601	Technical Statics	3
		18

Fourth Semester		Credits
CNST-2330	Construction Scheduling [C]	3
CNST-2410	Principles of Structural Design	3
CNST-2631	Construction Management Systems	3
CNST-xxxx	CNST Elective	3 - 4
Arts & Hum/Soc & Beh Sci (see AAS Degree requirements)		3
		15 - 16

	PROGRAM TOTAL	66-67

[1]MATH-1800-1820 may not be used to meet this requirement.

[C] = Capstone course.

CONSTRUCTION PROJECT MANAGEMENT

Certificate of Proficiency

The certificate program prepares students for entry level employment in areas involving construction project management including cost/quantity estimating, project scheduling, and CAD Technician. Program includes coursework in construction print reading, green building & sustainability, CAD, scheduling, and construction management practices. Students may apply all program credits toward the Construction Engineering Technology Degree program.

Program Admission Requirements:
- High School Diploma/GED
- Eligibility for ENG-1010 with grade of "C" or higher.
- Eligibility for MATH-1060 with grade of "C" or higher.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:
1. Monitoring project work for compliance with contract documents.
2. Interpret the intent of plans and specifications as they relate to the various aspects of the construction project from the perspective of the owner, design professional, construction manager, and contractor and have the associated computer proficiencies.
3. Apply the principles of project management process, innovation and technology to effectively identify characteristics of project delivery systems, perform contract document tasks, perform contract document tasks, and implement project processes for successful project completion.
4. Use various methods to organize project requirements into logical inter-related groupings that represent consensus of project stakeholders to develop a management tool that communicates project status using industry standard software.
5. Use critical thinking skills to anticipate, identify, respond to, and resolve problems.
6. Use verbal and written skills with technological tools to clearly and effectively communicate using appropriate protocols to project stakeholders.

Suggested Semester Sequence

First Semester		Credits
CNST-1281	Construction Engineering Orientation	3
CNST-1730	Construction Print Reading	2
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications	3
MATH-1280	Advanced Intermediate Algebra	5
		16

Second Semester		Credits
ACCT-1310	Financial Accounting	4
CNST-1410	Architectural CAD I	3
CNST-2130	Construction Methods, Materials and Equipment	3
CNST-2631	Construction Management Systems	3
CNST-xxxx	CNST Elective	3
		16
	PROGRAM TOTAL	32

CRIMINAL JUSTICE

Associate of Applied Science degree in Criminal Justice
(formerly Law Enforcement)

Various aspects of law enforcement and criminal justice are covered, including policing, the judicial system, criminal investigations, industrial/corporate security and juvenile delinquency. The program sequence offers a balanced and broad education to students who plan to enter law enforcement as a career. It helps in-service police officers upgrade themselves for advancement within the ranks. Many students join a municipal force but career opportunities also are available in county, state and federal governments.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Recognize and practice ethical behavior associated with the law enforcement professions.

2. Apply state and federal legal standards, including statutory and case law, to adults and juveniles in civil and criminal matters, in both public and private sectors.

3. Purposefully adapt oral, written and non-verbal styles and techniques to communicate effectively in diverse professional roles and environments.

4. Maintain personal health and well-being in carrying out professional responsibilities.

5. Apply understanding of law enforcement culture to develop and refine skill sets essential to specific law enforcement positions.

Suggested Semester Sequence

First Semester		Credits
CJ-1000	Introduction to Criminal Justice	3
CJ-1120	Criminal Court Procedure	2
CJ-1130	Criminal Evidence	2
CJ-1320	Ethics in Criminal Justice	2
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
PSY-1010	General Psychology … OR	3
PSY-101H	Honors General Psychology	_
		18

Second Semester		Credits
CJ-1010	Computers in Criminal Justice	2
CJ-1111	Constitutional Law for Police	3
CJ-1330	Criminal Law	3
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II	
MATH-1xxx	1000-level MATH course or higher	3
SOC-1010	Introductory Sociology … OR	3
SOC-101H	Honors Introductory Sociology … OR	
UST-1010	Introduction to Urban Studies	_
		17

CRIMINAL JUSTICE (Continued)

Third Semester		Credits
CJ-2300	Juvenile Delinquency	2
CJ-2390	The Investigative Process	4
CJ-xxxx	Criminal Justice Elective	3
POL-1010	American National Government … OR	3
POL-101H	Honors American National Government	
SPCH-1xxx	Any 1000 level SPCH elective course or higher [1]	3
		15

Fourth Semester		Credits
CJ-2360	Community Oriented Policing	3
CJ-2440	Protection Services	2
CJ-2990	Issues in Supervision [C]	4
PSY-2xxx	Any 2000-level PSY elective course	3
		12

	PROGRAM TOTAL	62

[1]SPCH-1010 highly recommended.

[C] = Capstone course.

CRIMINAL JUSTICE
(Basic Police Academy)

Associate of Applied Science degree in Criminal Justice with a concentration in Basic Police Academy

(formerly Law Enforcement (Basic Police Academy))

This program is designed for students who have made the career decision to be peace officers and are enrolled in the Basic Peace Officer Academy affiliated with Cuyahoga Community College. The program provides opportunities for specific police training, as well as the educational base to prepare for career promotions.

Program Admission Requirements:
- Required - Contact Police Academy Office at the Unified Technologies Center. 216-987-3076.
- High School Diploma/GED

Other Information:
- Current valid driver's license.
- Must be at least 21 years of age at completion of academy.
- No felony convictions (misdemeanor convictions will be reviewed by Academy commander).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Recognize and practice ethical behavior associated with the law enforcement professions.

2. Apply state and federal legal standards, including statutory and case law, to adults and juveniles in civil and criminal matters, in both public and private sectors.

3. Purposefully adapt oral, written and non-verbal styles and techniques to communicate effectively in diverse professional roles and environments.

4. Maintain personal health and well-being in carrying out professional responsibilities.

5. Apply law enforcement culture and theory in the technical areas of firearm and patrol techniques, defensive driving and traffic enforcement and investigation.

6. Sit for the Ohio Peace Officer Training Commission (OPOTC) Exam.

Suggested Semester Sequence

First Semester		Credits
CJ-1000	Introduction to Criminal Justice	3
CJ-1120	Criminal Court Procedure	2
CJ-1130	Criminal Evidence	2
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
PSY-1010	General Psychology … OR	3
PSY-101H	Honors General Psychology	
SOC-1010	Introductory Sociology … OR	3
SOC-101H	Honors Introductory Sociology … OR	
UST-1010	Introduction to Urban Studies	
		19

Second Semester		Credits
CJ-1111	Constitutional Law for Police	3
CJ-1300	Patrol Operations [1]	4
CJ-1310	Traffic Enforcement and Investigation [1]	3
CJ-1330	Criminal Law [1]	3
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II	
HLTH-1230	Standard First Aid and Personal Safety [1]	1
PE-1000	Personal Fitness [1]	2
		19

Third Semester		Credits
CJ-1320	Ethics in Criminal Justice	2
CJ-2300	Juvenile Delinquency	2
CJ-2370	Fire Arms Techniques [1]	3
CJ-2380	Defensive Driving [1]	2
CJ-2390	The Investigative Process [1]	4
POL-1010	American National Government … OR	3
POL-101H	Honors American National Government	
SPCH-1xxx	Any 1000 level SPCH elective course or higher [2]	3
		19

Fourth Semester		Credits
CJ-1020	Introduction to Homeland Security [1]	2
CJ-2360	Community Oriented Policing	3
CJ-2990	Issues in Supervision [C]	4
MATH-1xxx	1000-level MATH course or higher	3
PSY-2xxx	Any 2000-level PSY elective course	3
		15

	PROGRAM TOTAL	72

[1]Students will receive credit for these courses upon successful completion of the Police Academy Program.

[2]SPCH-1010 highly recommended.

[C] = Capstone course.

CRIMINAL JUSTICE (Corrections)

Associate of Applied Science degree in Criminal Justice with a concentration in Corrections
(formerly Law Enforcement (Corrections))

This program provides a broad overview of corrections, probation and parole in both concepts and procedures. There are opportunities for employment in this growing field in local, state and federal agencies working in corrections at both community and institutional levels.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Recognize and practice ethical behavior associated with the law enforcement professions.

2. Apply state and federal legal standards, including statutory and case law, to adults and juveniles in civil and criminal matters, in both public and private sectors.

3. Purposefully adapt oral, written and non-verbal styles and techniques to communicate effectively in diverse professional roles and environments.

4. Maintain personal health and well-being in carrying out professional responsibilities.

5. Apply psychology and counseling principles and knowledge of community corrections, correctional facilities and programs to manage and provide services to community based and institutionalized offenders and prepare institutionalized offenders for community re-entry when appropriate.

Suggested Semester Sequence

First Semester		Credits
CJ-1000	Introduction to Criminal Justice	3
CJ-1070	Introduction to Corrections	3
CJ-1120	Criminal Court Procedure	2
CJ-1130	Criminal Evidence	2
CJ-1320	Ethics in Criminal Justice	2
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
		18

Second Semester		Credits
CJ-1010	Computers in Criminal Justice	2
CJ-1500	Community Intervention Resources	4
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II	
MATH-1xxx	1000-level MATH course or higher	3
PSY-1010	General Psychology … OR	3
PSY-101H	Honors General Psychology	
SOC-1010	Introductory Sociology … OR	3
SOC-101H	Honors Introductory Sociology … OR	
UST-1010	Introduction to Urban Studies	
		18

Third Semester		Credits
CJ-2300	Juvenile Delinquency	2
CJ-2510	Community Supervision and Aftercare	4
CJ-xxxx	Criminal Justice Elective	3
POL-1010	American National Government … OR	3
POL-101H	Honors American National Government	
SPCH-1xxx	Any 1000 level SPCH elective course or higher [1]	3
		15

Fourth Semester		Credits
CJ-2530	Correctional Case Management	3
CJ-2840	Corrections: Principles and Practices	3
CJ-2990	Issues in Supervision [C]	4
PSY-2xxx	Any 2000-level PSY elective course	3
		13
	PROGRAM TOTAL	64

[1]SPCH-1010 highly recommended.
[C]= Capstone course.

CRIMINAL JUSTICE
(Security Administration)
Associate of Applied Science degree in Criminal Justice with a concentration in Security Administration
(formerly Law Enforcement (Security Administration))

  This program is designed to prepare individuals working in various aspects of private or contract security service to assume administrative roles, as well as to broaden the knowledge of those employed in limited functional activities within the industry to assume more responsible positions in areas of loss prevention and detection, protection of life and property or investigative work.

Program Admission Requirements:
- Required. Most civil service exams require a high school diploma or GED.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Recognize and practice ethical behavior associated with the law enforcement professions.

2. Apply state and federal legal standards, including statutory and case law, to adults and juveniles in civil and criminal matters, in both public and private sectors.

3. Purposefully adapt oral, written and non-verbal styles and techniques to communicate effectively in diverse professional roles and environments.

4. Maintain personal health and well-being in carrying out professional responsibilities.

5. Conduct security surveys and investigations to protect resources and manage risk.

6. Apply basic business management principles and practices to risk management and asset protection personnel.

7. Effectively interact with local, state and federal government.

Suggested Semester Sequence

First Semester		Credits
CJ-1000	Introduction to Criminal Justice	3
CJ-1050	Introduction to Security	2
CJ-1120	Criminal Court Procedure	2
CJ-1320	Ethics in Criminal Justice	2
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
SOC-1010	Introductory Sociology … OR	3
SOC-101H	Honors Introductory Sociology … OR	
UST-1010	Introduction to Urban Studies	_
		18

Second Semester		Credits
CJ-1400	Assets Protection	4
CJ-xxxx	Criminal Justice Elective	3
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II	
MATH-1xxx	1000-level MATH course or higher	3
PSY-1010	General Psychology … OR	3
PSY-101H	Honors General Psychology	_
		16

Third Semester		Credits
CJ-2400	Security Management	4
CJ-2410	Security Investigation	3
CJ-2420	Legal Aspects of Private Security	3
POL-1010	American National Government … OR	3
POL-101H	Honors American National Government	
SPCH-1xxx	Any 1000 level SPCH elective course or higher [1]	3
		16

Fourth Semester		Credits
CJ-2440	Protection Services	2
CJ-2990	Issues in Supervision [C]	4
FIRE-2321	Fire Protection Systems	2
PSY-2xxx	Any 2000-level PSY elective course	3
SOC-2xxx	Any 2000-level SOC elective course … OR	3
UST-2xxx	Any 2000-level UST elective course	_
		14

	PROGRAM TOTAL	64

[1]SPCH-1010 highly recommended.

[C] = Capstone course.

DEAF INTERPRETIVE SERVICES

Associate of Applied Science degree in Deaf Interpretive Services

This program provides students with knowledge in the area of deafness and Deaf Culture, as well as skills in American Sign Language (ASL), other sign language systems, and methods of interpreting/transliterating. The curriculum is divided into two areas of study - Sign Language and Interpreter Training. Sign Language courses will provide the knowledge of ASL as a foreign language and English-based sign systems, while DIS courses provide the interpreting/transliterating skills necessary for students to seek K-12 state licensure upon graduation and National Interpreter Certification (NIC) after gaining experience working as an interpreter. Graduates of the program may work in the fields of medicine, business, video relay (VRS) or in other settings as a freelance provider as well as in a variety of educational settings. Graduates would be employed either as a freelance provider or an agency employee.

Program Manager – 216-987-5219

Program Admission Requirements:
- Required - contact DIS Program Coordinator/Manager 216-987-5219
- High School Diploma/GED
- ENG-1010 College Composition I ("B" grade or higher)
- ASL-1001, ASL-1010, DIS-1300, and EDUC-1011 ("B" grade or higher in each)

Other Information:
- Non-degree students may enroll for individual DIS courses, providing they meet the course specific prerequisites and have received permission from the DIS Program Manager.
- Any student who has not taken ASL classes for one academic year or more will be required to take an ASL placement test in order to be considered for DIS program admission. All transfer students are required to take a placement test. Please contact Donna Liebenauer at 216-987-5219.
- All DIS students entering practicum courses must undergo fingerprinting and background check to satisfy the K-12 practicum requirement. There is a fee for this screening.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Interpret in American Sign Language (ASL).

2. Transliterate in English-based sign systems.

3. Speak as native English user while interpreting for a person who is deaf.

4. Conduct yourself professionally and ethically according to the Registry of Interpreters for the Deaf (RID) and National Association of the Deaf (NAD) Code of Professional Conduct.

5. Be eligible for licensure from the Ohio Department of Education (ODE).

6. Sit for NAD-RID National Interpreter Certification (NIC).

Suggested Semester Sequence

First Semester		Credits
ASL-1001	Fingerspelling	2
ASL-1010	Beginning American Sign Language I	4
DIS-1300	Interpreting Fundamentals	3
EDUC-1011	Introduction to Education	3
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
		15

Second Semester		Credits
ASL-1020	Beginning American Sign Language II	4
ASL-1100	Deaf Culture	3
DIS-1402	American Sign Language Linguistics	3
EDUC-1411	Individuals with Exceptionalities	3
		13

Summer Semester		Credits
ASL-2010	Intermediate American Sign Language I	4
BADM-1050	Professional Success Strategy … OR	3
C&CR-1350	Legal Terminology … OR	
DIS-1xxx	Deaf Interpretive Services elective … OR	
GEN-1022	Strategies for Success … OR	
MA-1020	Medical Terminology I … OR	
PHIL-1000	Critical Thinking … OR	
THEA-1500	Acting I	
DIS-1310	Interpreting I	2
DIS-2320	Educational Interpreting	3
		12

Third Semester		Credits
ASL-2020	Intermediate American Sign Language II	4
DIS-1850	Practicum I	2
DIS-1970	Practicum Seminar I	1
DIS-2300	Transliterating	2
DIS-2310	Interpreting II	2
		11

Fourth Semester		Credits
ASL-2411	Advanced American Sign Language	4
DIS-2410	Voicing	2
DIS-2850	Practicum II [C]	2
DIS-2970	Practicum Seminar II	1
MATH-1xxx	1000-level MATH course or higher	3
		12

| | PROGRAM TOTAL | 63 |

[C] = Capstone course.

DENTAL ASSISTING
Certificate of Proficiency

This program has been deleted effective Fall 2014. Students interested in Dental Assisting should pursue the short-term certificate.

DENTAL ASSISTING
Short-Term Certificate

Dental Assistants are competent in technical, interpersonal and management areas. They work directly with dentists and patients and have responsibility for chairside assisting, taking dental radiographs (x-rays), laboratory procedures, business procedures and patient management. This certificate prepares graduates for entry-level positions and the ability to be licensed as an Ohio Dental Assistant Radiographer. Graduates may be eligible to take the Dental Assisting National Board Certification Exam and the Ohio Dental Assistants Certification Exam once specific exam criteria is met.

Program Manager – 216-987-4494

Program Admissions Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- Completion of ENG-1010 or ENG-101H (part-time option, check with program manager).
- 20 hours of recent observation or employment in a dental setting.
- Criminal background check required (see page 73).
- GPA required: 2.0

Other information:
- 15 students accepted per year
- See program manager if unable to meet observation/work requirement
- Dental Assisting Award available; contact department

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use dental terminology to communicate effectively with patients, colleagues and other dental professionals.
2. Use team skills including conflict resolution to enhance office productivity.
3. Act professionally and ethically according to ADAA Code of Ethics and HIPAA Guidelines.
4. Recognize medical emergencies and respond with health care provider, CPR and other appropriate measures.
5. Meet the eligibility requirement of the Ohio State Dental Board for Dental Assistant and Radiographer certifications.
6. Apply proper utilization of standard precautions during the performance of direct patient care (including room prep, lab duties, care and maintenance of instruments and equipment, dental radiography, management of dental materials and inventory and four-handed dentistry) to ensure dental practice efficiency.
7. Sit for the Ohio Dental Assisting Certification Exam after completing 500 clinical hours of dental assisting.

Suggested Semester Sequence

Summer Session		Credits
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	_
		3

First Semester		Credits
DAST-1300	Dental Assisting Methods I	5
DAST-1310	Dental Assisting Radiography I	3
DAST-1320	Dental Office Management	3
DAST-1200	Oral Structure and Development	3
		14

Second Semester		Credits
DAST-1850	Dental Assisting Practice	2
		2
	PROGRAM TOTAL	19

DENTAL OFFICE MANAGEMENT
Short-Term Certificate

This certificate prepares graduates for entry-level positions as Dental Office Managers in dental offices and clinics. Dental Office Managers are competent in scheduling and management areas of a dental practice. The program provides instruction in patient scheduling, accounting principles, telephone etiquette, collections, banking, third party reimbursement responsibilities, professional ethics and computer applications.

Program Manager - 216-987-4494

Program Admissions Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- Eligibility for ENG-1010 (part-time option, check with program manager).
- Completion of MATH-0910

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use dental terminology to communicate effectively with patients, colleagues and other dental professionals.
2. Use team skills including conflict resolution to enhance office productivity.
3. Act professionally and ethically according to ADAA Code of Ethics and HIPAA Guidelines.
4. Recognize medical emergencies and respond with health care provider, CPR and other appropriate measures.
5. Use telephone protocols, computer skills, scheduling and patient data collection, and marketing techniques to optimize office efficiency and maximize practice income.

DENTAL OFFICE MANAGEMENT
(Continued)

6. Apply knowledge of basic insurance coverage and accounting skills to process claims and manage financial arrangements, accounts payable and receivables and payroll.

7. Coordinate smooth operational flow to include: compliance, office maintenance, supplies, purchasing, establishing policies and procedures, and human resource management and marketing.

Suggested Semester Sequence

First Semester		Credits
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
IT-1000	Keyboarding	2
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
DAST-1200	Oral Structure and Development	3
DAST-1320	Dental Office Management	3
DAST-1330	Reimbursement for Dental Services	2
		16
	PROGRAM TOTAL	16

[1]To ensure success in the certificate, students should complete ENG-1010 prior to enrolling in other courses OR take the placement test and be eligible to take ENG-1010.

DENTAL HYGIENE

Associate of Applied Science degree in Dental Hygiene

Dental Hygienists are licensed primary health care professionals, health care educators and clinicians who provide preventive, educational and therapeutic services supporting total health for the control of oral diseases and the promotion of oral health. Employment opportunities exist in private practices, health care agencies, hospitals, sales, government research programs and in dental hygiene education programs. Upon successful completion of this curriculum, the graduate may take national and regional board examinations and apply for licensure.

Program Manager 216-987-4494

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Complete the program admission requirements (listed on next page) with a "C" or higher in each.
- GPA required: 3.0 admission requirements, 2.5 overall
- 20 hour observation/work experience. 16 hours in a dental setting that employs a Registered Dental Hygienist. 4 hours must be in the Dental Hygiene Clinic at the Metro Campus; Please call (216) 987-4413 to schedule appointment. Please refer to the form in the application packet.

Other Information:
- 24 students accepted per year.

- Science courses (BIO-1100, BIO-2331, BIO-2341) must have been completed within five (5) years of admission to the program.
- ENG-1010, ENG-101H, PSY-1010, PSY-101H and or (1) science course may be repeated once to improve a grade.
- Successful completion of Tri-C authorized background check, fingerprinting and BCI records search required (see page 73).
- Overall GPA must not fall below 2.5 while awaiting matriculation into the Dental Hygiene program.
- Non-native English speaking applicants: The Commission on Dental Accreditation and Cuyahoga Community College Dental Hygiene Program Competencies mandate that students be competent in interpersonal and communication skills to effectively interact with diverse populations. The ability to communicate verbally and in written form is basic to the provision of oral health services in a safe and effective manner. Therefore, applicants whose native language is not English must take the TOEFL - see http://www.toefl.org. Applicants must achieve the following minimum scores: READING-21, LISTENING-21, WRITING-23 and SPEAKING-25.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Act responsibly toward self, peers, faculty and clients.

2. Demonstrate critical thinking and decision-making skills in all aspects of client care.

3. Communicate verbally and in writing to clients, colleagues and other professionals.

4. Integrate the Code of Ethics for Dental Hygienists with evidence of skills in ethical reasoning.

5. Incorporate professional integrity and continued growth into all aspects of dental hygiene care.

6. Determine the validity of oral health services in various segments of the community using evidence-based methods.

7. Demonstrate the ability to promote oral health in the global community.

8. Recognize the need and follow protocol indicated for medical emergencies that occur in an oral health care environment.

9. Accurately collect, analyze and document current and historical data on the systemic/oral health status of a variety of clients that impacts the delivery of dental hygiene care.

10. Utilize all the information gleaned through the assessment process and develop a comprehensive dental hygiene diagnosis incorporating current research.

11. Devise a client-centered dental hygiene care plan that is evidence-based.

12. Apply appropriate treatment modalities and communicate oral health education concepts that will culminate in achieving the dental hygiene care plan.

13. In partnership with the client, determine if the implementation phase was effective in achieving the goals outlined in the comprehensive dental hygiene care plan and modify when indicated.

DENTAL HYGIENE (Continued)

14. In partnership with the client, ensure that documentation is complete and accurate of all collected data, treatment planned and provided, recommendations and other information relevant to client care and treatment.

Suggested Semester Sequence

Program Admissions Requirements Semester		Credits
BIO-1100	Introduction to Biological Chemistry[1]	3
BIO-2331	Anatomy and Physiology I 2	4
BIO-2341	Anatomy and Physiology II	4
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
PSY-1010	General Psychology … OR	3
PSY-101H	Honors General Psychology	
		17

First Semester		Credits
DENT-1300	Preventive Oral Health Services I	4
DENT-1311	Dental Anatomy, Histology & Embryology	2
DENT-1320	Dental Hygiene Fundamentals	1
DENT-1330	Radiology	3
DENT-1340	Dental Hygiene Care Ethics	1
MATH-1141	Applied Algebra and Mathematical Reasoning or higher	3
		14

Second Semester		Credits
BIO-2500	Microbiology	4
DENT-1400	Preventive Oral Health Services II	5
DENT-1410	Current Concepts in Dental Materials	2
DENT-1420	Periodontics I	2
DENT-1431	Head and Neck Anatomy	2
DENT-1440	General and Oral Pathology	2
		17

Third Semester		Credits
DENT-2200	Local Anesthesia and Pain Management	2
DENT-2300	Preventive Oral Health Services III	5
DENT-2320	Periodontics II	2
DENT-2332	Pharmacology and Therapeutics	2
DENT-2340	Community Oral Health I	1
DIET-1220	Nutrition for Dental Hygiene[3]	2
SPCH-1000	Fundamentals of Interpersonal Communication … OR	3
SPCH-1010	Fundamentals of Speech Communication … OR	3
SPCH-101H	Honors Fundamentals of Speech Communication	3
		17

Fourth Semester		Credits
DENT-2400	Preventive Oral Health Services IV	5
DENT-2440	Community Oral Health II	1
DENT-2990	Dental Hygiene Practice C	1
SOC-1010	Introductory Sociology … OR	3
SOC-101H	Honors Introductory Sociology	
		10

PROGRAM TOTAL   75

[1]CHEM-1010 and 1020 will be accepted in place of BIO-1100.
 [2]BIO-2330 & 2340 will be accepted in place of BIO-2331 & BIO-2341.
 [3]DIET-1200 will be accepted in place of DIET-1220.

C = Capstone course.

DIAGNOSTIC MEDICAL SONOGRAPHY

Associate of Applied Science degree in Diagnostic Medical Sonography

The Associate of Applied Science degree prepares the student for an entry-level position as a Diagnostic Medical Sonographer for employment in hospitals and other health care agencies. The Diagnostic Medical Sonographer produces, evaluates, and correlates ultrasound images and related data. Sonographers provide a summary of their technical findings to the qualified interpreting physician to aid in rendering a medical decision. The curriculum consists of on-campus didactic and lab instruction, as well as off-campus clinical applications at our affiliated health care institutions. The program offers specialty training in adult echocardiography and vascular technology. The Diagnostic Medical Sonography program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). Upon completion of the Diagnostic Medical Sonography program, graduates are eligible to apply for the national credentialing exams by the American Registry of Diagnostic Medical Sonography (ARDMS) in the exam offerings of their specialty option. Students will also have the option to individualize and enhance their sonography career by taking coursework in other sonography specialty coursework such as breast sonography and pediatric cardiac sonography. **Final acceptance into the Diagnostic Medical Sonography program is contingent upon the results of the required background check.**

Program Manager – 216-987-5564

Program Admissions Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- Applications may be submitted mid-semester of the last requirement(s) taken as listed below. Students must request an application packet from the health careers enrollment center 216-987-4247 for comprehensive admissions and program information.   Students may also access the DMS website for this information. http://www.tri-c.edu/programs/healthcareers/sonography/Pages/Default.aspx
- High School Diploma/GED
- Complete ENG-1010 or ENG-101H with "C" or higher
- Complete MATH-1141, MATH-1190, MATH-1270, MATH-1280, MATH-1410, MATH-1521, MATH-152H, MATH-1580 or MATH-1610 with "C" or higher.
- Complete each of the following with "C" grade or higher: BIO-2331 and 2341 (or BIO-2330 and BIO-2340), DMS-1071, DMS-1303, DMS-1320, DMS-1351.
- GPA required: Minimum 3.0 for DMS 1303, DMS 1320 and DMS 1071 (total 5 credits). Minimum 3.0 for BIO 2331 and BIO 2341 (total 8 credits). GPA calculated using only the Tri-C specific admission course credit hours listed above.
- Verification of having completed a 8-16 hour observation where the candidate "shadows" an ARDMS-credentialed sonographer in the hospital environment. 50% of the exams observed should be on in-patients. See the DMS application packet for details and the required form.

Other Information:
- 24-40 students accepted per year.
- To improve from a previous attempt, only two of the admission courses may be repeated once. A "W" is counted as an attempt.

- Criminal background check required (see page 73). See General Application Procedures for Health Careers.
- Non-native English speaking applicants: TOEFL minimal iBT score of 24 is required in the speaking skill component and a minimal iBT score of 22 is required in the listening skill component, due to DMS Program Technical Standards for written and verbal English communication skills. Arrangements and costs incurred for the TOEFL (www.ets.org) will be the responsibility of the student.
- Applicant must submit evidence of good health by fulfilling health requirements of the DMS Program and verification of current CPR certification prior to clinical assignment. Complete information provided during the first semester of the Program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Exhibit an awareness of continuity of care through effective, empathetic communication and interpersonal skills.
2. Display sensitivity to all aspects of diversity.
3. Seek and accept opportunities for improvement by being a team player that is confident, flexible, and passionate about what they do.
4. Exercise discretion, knowledge, and independent judgment in performing sonographic procedures, accessing medical information systems, and in seeking assistance.
5. Integrate pertinent patient history, supporting clinical data, and data obtained using ultrasound and related diagnostic technologies to provide a summary of findings to the physician.
6. Become a credentialed sonographer that continually educates oneself in sonography and in issues affecting the healthcare industry in recognition of the value of other modalities and professions.

Letters in parenthesis relate to Options a, b, c, and d. Select option(s) when applying for this program.

Suggested Semester Sequence

Program Admissions Requirements Semester		Credits
BIO-2331	Anatomy and Physiology I	4
BIO-2341	Anatomy and Physiology II	4
DMS-1071	Concepts of Physics in Diagnostic Sonography	2
DMS-1303	Introduction to Sonography	2
DMS-1320	Introduction to Sonographic Scanning	1
DMS-1351	Patient Care Skills	1
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MATH-1141	Applied Algebra and Mathematical Reasoning [1]	3
		20

DIAGNOSTIC MEDICAL SONOGRAPHY (Continued)

First Semester		Credits
DMS-1311	Initial Sonographic Scanning	2
DMS-1602	Echocardiography I (a) … OR	4
DMS-1701	Vascular Sonography I (b)	
DMS-235B	Doppler Principles and Instrumentation	1
MA-1020	Medical Terminology I	3
PSY-1010	General Psychology … OR	3
PSY-101H	Honors General Psychology	_
		13

Second Semester		Credits
DMS-1940	Field Experience I	1
DMS-2301	Intermediate Sonographic Scanning	2
DMS-2602	Echocardiography II (a) … OR	4
DMS-2702	Vascular Sonography II (b)	
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II	
PSY-1060	Cross-Cultural Competency for Health Care Providers	1
		11

Summer Semester		Credits
DMS-1950	Field Experience II	2
DMS-2000	Sonographic Case Studies	1
		3

Third Semester		Credits
DMS-235A	Sonographic Principles, Performance, and Safety	2
DMS-2940	Field Experience III	3
DMS-2985	Physics Review	1
DMS-2991	Sonography Capstone	1
		7

Fourth Semester		Credits
DMS-2950	Field Experience IV	1
DMS-2981	Specialty Registry Review	1
DMS-xxxx	Diagnostic Medical Sonography Elective [2]	1 - 3
PHIL-2050	Bioethics … OR	3
PHIL-205H	Honors Bioethics	
SPCH-1xxx	Any 1000 level SPCH elective course or higher	3
		9 - 11

	PROGRAM TOTAL	63 - 65

[1]Only the following will be accepted in place of Math 1141: MATH-1190, MATH-1270, MATH-1280, MATH-1410, MATH-1521, MATH-152H, MATH-1580 or MATH-1610.
 [2]Course selection requires departmental approval

Letters in parenthesis relate to Options a and b. Select option when applying for this program. Program Total for Option a =62-64 credits; Program Total for Option b =62-64 credits

C = Capstone course.

OPTIONS

(a)Echocardiography Option. Total=62 – 64		Credits
Take the following courses to complete Option A:		
DMS 1602	Echocardiography I	4
DMS 2602	Echocardiography II	4

(b)Vascular Option. Total=62 - 64		Credits
Take the following courses to complete Option B:		
DMS 1701	Vascular Sonography I	4
DMS 2702	Vascular Sonography II	4

ELECTIVES

Technical Electives		Credits
Select from the following courses to fulfill DMS elective option:		
DMS 1260	Pediatric Cardiovascular Anatomy, Physiology and Assessment	2
DMS 1381	Cardiac Diagnostic Procedures	3
DMS 2330	Sonographic Pathology	3
DMS 2450	Breast Sonography	2
DMS 2650	Pediatric Cardiac Sonography	3
DMS 2750	Principles of Vascular Imaging for Abdomen and Cardiac Sonographers	3
DMS 2960	Supplemental Field Experience	2
DMS 2983	Supplemental Specialty Registry Review	1

DIAGNOSTIC MEDICAL SONOGRAPHY (General Sonography)

Associate of Applied Science degree in Diagnostic Medical Sonography with a concentration in General Sonography.

The Associate of Applied Science degree prepares the student for an entry-level position as a Diagnostic Medical Sonographer for employment in hospitals and other health care agencies. The Diagnostic Medical Sonographer produces, evaluates, and correlates ultrasound images and related data. Sonographers provide a summary of their technical findings to the qualified interpreting physician to aid in rendering a medical decision. The curriculum consists of on-campus didactic and lab instruction, as well as off-campus clinical applications at our affiliated health care institutions. The program offers specialty training in abdominal sonography and obstetrical/gynecological sonography. The Diagnostic Medical Sonography program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). Upon completion of the Diagnostic Medical Sonography program, graduates are eligible to apply for the national credentialing exams by the American Registry of Diagnostic Medical Sonography (ARDMS) in the exam offerings of abdominal and Ob/Gyn sonography. **Final acceptance into the Diagnostic Medical Sonography program is contingent upon the results of the required background check.**

Program Manager – 216-987-5564

Program Admissions Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- Applications may be submitted mid-semester of the last requirement(s) taken as listed below. Students must request an application packet from the health careers enrollment center 216-987-4247 for comprehensive admissions and program information. Students may also access the DMS website for this information. http://www.tri-c.edu/programs/healthcareers/sonography/Pages/Default.aspx
- High School Diploma/GED
- Complete ENG-1010 or ENG-101H with "C" or higher
- Complete MATH-1141, MATH-1190, MATH-1270, MATH-1280, MATH-1410, MATH-1521, MATH-152H, MATH-1580 or MATH-1610 with "C" or higher.
- 16-24 students accepted per year.
- Minimum 3.0 for DMS 1303, DMS 1320 and DMS 1071 (total 5 credits)
- Minimum 3.0 for BIO-2331 and BIO-2341 (total 8 credits)
- GPA calculated using only the Tri-C specific admission course credit hours listed above.
- Verification of having completed a 8-16 hour observation where the candidate "shadows" an ARDMS-credentialed sonographer in the hospital environment. 50% of the exams observed should be on in-patients. See the DMS application packet for details and the required form.
- Complete the following Program Admissions requirements with a "C" grade or higher in each: BIO-2331, BIO-2341, DMS-1071, DMS-1303, DMS-1320, DMS-1351.

Other Information:
- To improve from a previous attempt, only two of the admission courses may be repeated once. A "W" is counted as an attempt.
- Criminal background check required (see page 73). Also see General Application Procedures for Health Careers.

- Non-native English speaking applicants: TOEFL minimal iBT score of 24 is required in the speaking skill component and a minimal iBT score of 22 is required in the listening skill component, due to DMS Program Technical Standards for written and verbal English communication skills. Arrangements and costs incurred for the TOEFL (www.ets.org) will be the responsibility of the student.
- Applicant must submit evidence of good health by fulfilling health requirements of the DMS Program and verification of current CPR certification prior to clinical assignment. Complete information provided during the first semester of the Program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Exhibit an awareness of continuity of care through effective, empathetic communication and interpersonal skills.
2. Display sensitivity to all aspects of diversity.
3. Seek and accept opportunities for improvement by being a team player that is confident, flexible, and passionate about what they do.
4. Exercise discretion, knowledge, and independent judgment in performing sonographic procedures, accessing medical information systems, and in seeking assistance.
5. Integrate pertinent patient history, supporting clinical data, and data obtained using ultrasound and related diagnostic technologies to provide a summary of findings to the physician.
6. Become a credentialed sonographer that continually educates oneself in sonography and in issues affecting the healthcare industry in recognition of the value of other modalities and professions.

Suggested Semester Sequence

Program Admissions Requirements Semester		Credits
BIO-2331	Anatomy and Physiology I	4
BIO-2341	Anatomy and Physiology II	4
DMS-1071	Concepts of Physics in Diagnostic Sonography	2
DMS-1303	Introduction to Sonography	2
DMS-1320	Introduction to Sonographic Scanning	1
DMS-1351	Patient Care Skills	1
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MATH-1141	Applied Algebra and Mathematical Reasoning [1]	3
		20

DIAGNOSTIC MEDICAL SONOGRAPHY
(General Sonography) (Continued)

First Semester		Credits
DMS-1311	Initial Sonographic Scanning	2
DMS-1401	Abdominal Sonography I	4
DMS-1500	Gynecologic and Obstetrical Sonography	4
MA-1020	Medical Terminology I	3
PSY-1010	General Psychology … OR	3
PSY-101H	Honors General Psychology	_
		16

Second Semester		Credits
DMS-1940	Field Experience I	1
DMS-2301	Intermediate Sonographic Scanning	2
DMS-2401	Abdominal Sonography II	4
DMS-2500	Obstetrical Sonography	4
PSY-1060	Cross-Cultural Competency for Health Care Providers	1
		12

Summer Semester		Credits
DMS-1950	Field Experience II	2
DMS-2000	Sonographic Case Studies	1
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II	_
		6

Third Semester		Credits
DMS-235A	Sonographic Principles, Performance, and Safety	2
DMS-235B	Doppler Principles and Instrumentation	1
DMS-2940	Field Experience III	3
DMS-2985	Physics Review	1
DMS-2991	Sonography Capstone	1
		8

Fourth Semester		Credits
DMS-2950	Field Experience IV	1
DMS-2981	Specialty Registry Review	1
DMS-xxxx	Diagnostic Medical Sonography Elective	1 - 3
PHIL-2050	Bioethics … OR	3
PHIL-205H	Honors Bioethics	
SPCH-1xxx	Any 1000 level SPCH elective course or higher	3
		9 - 11

	PROGRAM TOTAL	71 - 73

C = Capstone course.

[1]Only the following will be accepted in place of MATH-1141: MATH-1190, MATH-1270, MATH-1280, MATH-1410, MATH-1521, MATH-152H, MATH-1580 or MATH-1610.

ELECTIVES

Technical Electives		Credits

Select from the following courses to fulfill DMS elective option:

DMS-1260	Pediatric Cardiovascular Anatomy, Physiology and Assessment	2
DMS-1381	Cardiac Diagnostic Procedures	3
DMS-2330	Sonographic Pathology	3
DMS-2450	Breast Sonography	2
DMS-2650	Pediatric Cardiac Sonography	3
DMS-2750	Principles of Vascular Imaging for Abdomen and Cardiac Sonographers	3
DMS-2960	Supplemental Field Experience	2
DMS-2983	Supplemental Specialty Registry Review	1

DIETETIC TECHNOLOGY

Associate of Applied Science degree in Dietetic Technology

A Graduate of the Dietetic Technology Program or Dietetic Technician is a food and nutrition practitioner, often working in conjunction with a Registered Dietitian. Dietetic Technicians work in a variety of employment settings including health care (assisting Registered Dietitians in providing medical nutrition therapy), in hospitals, HMO's, clinics, or other health care facilities. Dietetic Technicians may also work in community and public health settings such as schools or day care centers, correctional facilities, weight management clinics, and WIC programs . A growing number work in the food and nutrition industry, as contract employees for food management companies or food vending and distribution, developing menus and overseeing foodservice sanitation and food safety or providing nutrition labeling information and analysis. This program is accredited by The Accreditation Council for Education in Nutrition and Dietetics (ACEND), 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6995, 312-899-0040, ext. 5400.

Program Manager – 216-987-4613

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Eligibility for ENG-1010
- Eligibility for MATH-1141 Applied Algebra and Mathematical Reasoning or higher
- Seven year limit on Math and Science courses. Three year limit on Dietetic Technology courses.
- GPA required: 2.0 admission requirements, 2.0 overall

Other Information:

- 20 students accepted per year.
- Dietetic Technology students are required to complete 30 hours of volunteer time in order to graduate from the program. 15 hours must be completed prior to program admission. Please contact Program Manager for instructions. Volunteer hours are defined as time spent in an nutrition related activity outside of classroom or supervised practice/practicum hours. The student is required to submit a Volunteer Hour Verification form for each volunteer activity and a summary of Volunteer Hours upon completion of the 30 hours. The 30 hours must be completed at a minimum of 6 different sites.
- Sufficient score on Biology placement test or grade of "C" or higher in BIO-1100.
- Student must pass criminal background check BCI prior to admission into DTP as specified: http://www.tri-c.edu/programs/healthcareers/Pages/BackgroundCheckInformation.aspx . (See also page 73).
- Information regarding cost to student, such as estimated expenses for travel, books, liability insurance, medical exams, uniforms and other DTP specific costs, in addition to tuition can be found at: http://www.tri-c.edu/programs/healthcareers/dietary/Pages/default.aspx
- General Nutrition certificate available.
- Dietary Manager certificate available.
- DTP Goals and Graduate Outcomes can be found at http://www.tri-c.edu/programs/healthcareers/dietary/Pages/default.aspx

DIETETIC TECHNOLOGY (Continued)

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Perform professionally and ethically according to ADA Code of Ethics and Commission on Dietetic Registration Standards, applying new knowledge within community and work setting.
2. Participate in development, implementation, evaluation and maintenance of community based food and nutrition programs/work site promotion of disease prevention programs for diverse populations.
3. Use appropriate medical data and knowledge of body systems and evidence based research to design and implement nutrition care plans, conduct nutrition screenings and make appropriate referrals, and assist with nutrition assessment by monitoring diverse individuals, populations and community groups across the life span within scope of practice.
4. Apply knowledge of mathematics to develop and analyze recipes, formulas and diets; apply financial and procurement principles to collecting and processing financial data.
5. Use appropriate interpersonal skills, medical terminology and technology in written and verbal communication with interdisciplinary teams, patients/clients and family members.
6. Apply educational and psychological principles to develop and implement educational and training programs for patients, clients, and target audience within scope of practice.
7. Apply supervisory concepts to food production including procurement, distribution/service, menu development; applying sensory evaluation and safety/sanitation principle and concepts.
8. Apply supervisory concepts to the organizational unit, including financial, human, physical, and material resources and services.
9. Apply evidence-based research and management principles to human resource functions, facility management, organizational change, planning and goal setting, development and measurement of outcomes, and quality improvement (QI).

Suggested Semester Sequence

Summer Semester		Credits
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
BIO-2331	Anatomy and Physiology I	4
		7

First Semester		Credits
BIO-2341	Anatomy and Physiology II	4
DIET-1200	Basic Nutrition	3
DIET-1320	Nutrition Applications	1
DIET-1310	Introduction to Dietetics	2
HOSP-1020	Sanitation and Safety	2
MATH-1141	Applied Algebra and Mathematical Reasoning or higher	3
		15

Second Semester		Credits
DIET-1331	Fundamentals of Food Production	4
DIET-1580	Cost Control Procedures	1
DIET-1590	Purchasing Procedures	1
DIET-1600	Introduction to Supervision	3
DIET-1850	Food and Nutrition Systems Practicum	4
		13

Third Semester		Credits
DIET-2301	Medical Nutrition Therapy I	3
DIET-2410	Life Cycle Nutrition - Pregnancy and Lactation	1
DIET-2420	Life Cycle Nutrition - Nutrition for Children	1
DIET-2430	Life Cycle Nutrition - Nutrition through Adulthood	1
DIET-2863	Community Nutrition Practicum	2
HTEC-1120	Critical Thinking in Healthcare	1
MA-1020	Medical Terminology I	3
PSY-1010	General Psychology … OR	3
PSY-101H	Honors General Psychology	
SPCH-1010	Fundamentals of Speech Communication … OR	3
SPCH-101H	Honors Fundamentals of Speech Communication	
		18

Fourth Semester		Credits
DIET-2862	Geriatric Nutrition Practicum	2
DIET-2990	Dietetic Technology Professional Development Skills C	2
DIET-2501	Nutrition Applications in Long Term Care [2]	2
DIET-2311	Medical Nutrition Therapy II [1]	3
DIET-2320	Medical Nutrition Therapy III [1]	2
DIET-2850	Medical Nutrition Care Practicum	2
		13

	PROGRAM TOTAL	66

[2] 2nd eight week course.
[1] 1st eight week course.

C = Capstone course.

DIETARY MANAGEMENT
Certificate of Proficiency

This program is designed for health care employees interested in developing dietary management skills. The four major components of the program are: Nutrition and Medical Nutrition Therapy, Management of Foodservice Operations, Human Resource Management, and Sanitation and Food Safety. This program is approved by the Association of Nutrition & Foodservice Professionals (AFNP).

Degree: Students may apply credits toward the Dietetic Technology degree program.

Program Manager 216-987-4613

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Eligibility for ENG-1010
- Eligibility for MATH-1141
- Seven year limit on core courses prior to application.
- 20 students accepted per year in the program.
- GPA required: 2.0 admission requirements, 2.0 overall
- General Nutrition certificate available.
- Background check required (see page 73).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Perform professionally and ethically according to ADA Code of Ethics and Commission on Dietetic Registration Standards, applying new knowledge within community and work setting.

2. Use appropriate medical data and knowledge of body systems and evidence based research to design and implement nutrition care plans, conduct nutrition screenings and make appropriate referrals and assist with nutrition assessment by monitoring diverse individuals, populations and community groups across the life span within scope of practice.

3. Apply knowledge of mathematics to develop and analyze recipes, formulas and diets, apply financial and procurement principles to collecting and processing financial data.

4. Use appropriate interpersonal skills, medical terminology and technology in written and verbal communication with interdisciplinary teams, patients/clients and family members.

5. Educational and psychological principles to develop and implement educational and training programs for patients, clients, and target audience within scope of practice.

6. Apply supervisory concepts to food production including procurement, distribution/service, menu development; applying sensory evaluation and safety/sanitation principle and concepts.

7. Apply supervisory concepts to the organizational unit, including financial, human, physical, and material resources and services.

8. Apply evidence-based research and management principles to human resource functions, facility management, organizational change, planning and goal setting;

development and measurement of outcomes and quality improvement.

Suggested Semester Sequence

First Semester		Credits
DIET-1200	Basic Nutrition	3
DIET-1320	Nutrition Applications	1
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
HOSP-1020	Sanitation and Safety	2
MA-1020	Medical Terminology I	3
MATH-1060	Survey of Mathematics or higher[1]	3
		15

Second Semester		Credits
DIET-1331	Fundamentals of Food Production	4
DIET-1580	Cost Control Procedures	1
DIET-1590	Purchasing Procedures	1
DIET-1600	Introduction to Supervision	3
DIET-1940	Dietary Managers Field Experience	1
DIET-2301	Medical Nutrition Therapy I	3
DIET-xxxx	DIET Elective course	2 - 3
		15 - 16

	PROGRAM TOTAL	30 - 31

[1]MATH-1141 recommended for students who plan to apply credits to Dietetic Technology degree program.

GENERAL NUTRITION
Certificate of Proficiency

Designed for individuals and allied health care professionals who are interested in learning more about basic nutrition, but are not interested in pursuing a Dietetic Technology degree. This certificate focuses on wellness and disease prevention through proper nutrition and eating behaviors. Students earning this certificate are not qualified to practice medical nutrition therapy, as stated by the State of Ohio. Degree: Students may apply credits toward the Dietetic Technology degree program.

Degree: Students may apply credits toward the Dietetic Technology degree program.

Program Manager – 216-987-4613

Program Admission Requirements:

- Completion of Health Careers Application.
- High School Diploma/GED
- Eligibility for ENG-1010
- Eligibility for MATH-1141 Applied Algebra and Mathematical Reasoning or higher
- Seven year limit on Math and Science courses. Three year limit on Dietetic Technology courses.
- 10 Students accepted per year in the program.
- GPA required: 2.0 admission requirements, 2.0 overall
- Eligibility for BIO-2331 (appropriate score on Biology placement test or BIO-1100 with "C" or higher).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Perform professionally and ethically according to ADA Code of Ethics and Commission on Dietetic Registration Standards, applying new knowledge within community and work setting.

2. Use appropriate medical data and knowledge of body systems and evidence based research to design and implement nutrition care plans, conduct nutrition screenings, make appropriate referrals and assist with nutrition assessment by monitoring diverse individuals, populations and community groups across the life span within scope of practice.

3. Apply knowledge of mathematics to develop and analyze recipes and formulas.

4. Communicate accurate evidence-based nutrition information both verbally and written to clients.

5. Implement education programs for target audience within scope of practice.

6. Locate and validate evidence-based research.

Suggested Semester Sequence

First Semester		Credits
BIO-2331	Anatomy and Physiology I[1]	4
DIET-1200	Basic Nutrition	3
DIET-1320	Nutrition Applications	1
DIET-xxxx	DIET Elective	3
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MATH-1060	Survey of Mathematics or higher [2]	3
		17

Second Semester		Credits
BIO-2341	Anatomy and Physiology II[1]	4
DIET-2410	Life Cycle Nutrition - Pregnancy and Lactation	1
DIET-2420	Life Cycle Nutrition - Nutrition for Children	1
DIET-2430	Life Cycle Nutrition – Nutrition through Adulthood	1
DIET-xxxx	DIET Elective course	2 - 3
HLTH-1100	Personal Health Education	3
SES-1201	Fitness and Wellness Coaching	3
		14 - 15
	PROGRAM TOTAL	31 - 32

[1]BIO-2330 & 2340 together will be accepted in place of BIO-2331 & BIO-2341.
[2]MATH-1141 recommended for students who plan to apply credits to Dietetic Technology Degree program.

EARLY CHILDHOOD EDUCATION

Associate of Applied Science degree in Early Childhood Education

The Early Childhood Education program prepares students to teach young children in a variety of inclusive early childhood settings, including preschools, pre-kindergartens, Head Start, child care centers and infant/toddler programs. The program is offered at the Eastern, Metropolitan and Western campuses. Students will receive a basic understanding of principles of early childhood education, child growth and development, and will develop specific skills in planning and implementing the curriculum in centers. Upon completion of the program, students will be qualified to assume lead teacher and director positions. This program is accredited by the Ohio Department of Education to prepare students for state licensure as Pre-Kindergarten Associate teachers. Graduates of this program may work with children through five years of age. To work with children in kindergarten or the primary grades, a baccalaureate degree and state teacher's license for Pre-K to third grade is required. A number of four-year teacher preparation programs have transfer agreements with the College's Early Childhood program.

The Pre-Kindergarten (Pre-K) Associate Licensure is available for students who complete the Associate of Applied Science degree in Early Childhood Education. The Pre-K Associate license also requires an overall grade point average of 2.00, a grade point average of 2.50 in Early Childhood (ECE) and Education (EDUC) courses, and 3.00 in the teaching practicums and seminar (ECED 1860, 2870, 2990). The Early Childhood Education program recommends graduates for state licensure after the student passes the Ohio Department of Education's prekindergarten education licensure exam.

Program Manager - 216-987-2513

Program Admission Requirements:

- Details of program admission will be explained to students enrolled in ECED-1010 course offered each semester.
- High School Diploma/GED
- Complete ENG-1010 or ENG-101H with "C" or higher
- Complete Mathematics placement test
- Complete ECED-1010 with "C" grade or higher

Other Information:
- Applicants for Early Childhood Education must be able to sign the Ohio Department of Job and Family Services Statement of Nonconviction, attesting that they have never been convicted or pleaded guilty to child abuse or other crimes of violence [of Divisions (A)(8) or (A)(9) of Section 109.572 or division (A)(1) of 5104.09 of the Revised Code] and that no child has been removed from their home [Sect. 2151.353 Ohio Revised Code] in each Early Childhood (ECED) and Education (EDUC) course.
- The student is eligible for the Pre-Kindergarten Associate Teacher's license when the associate degree is completed with an overall GPA of 2.0, a GPA of 2.5 in all Early Childhood and Education courses, and with completion of 345 hours of faculty supervised field work earning a 3.0 in ECED-1860, 2870 and 2990.
- Pre-Kindergarten Associate teacher's license can be applied for after the student passes the licensure exam. The licensure exam is a requirement of the Ohio Department of Education and is not affiliated with Cuyahoga Community College.

- Complete BCI and FBI check required upon completion of ECED-1010 (see page 73).
- Application requirements for the Early Childhood Education degree and the Pre-Kindergarten Associate degree licensure are the same.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Support the diverse ways in which children learn by interpreting and applying knowledge of child growth and development.

2. Include and value children, families and communities; create respectful reciprocal relationships; and support and involve all families in their children's development and learning.

3. Use observation, documentation, and other appropriate assessment tools for: planning curriculum, identifying special needs, deepening understanding of child development, communicating with families and professionals and improving teaching practices.

4. Create an inviting and enriched environment that supports children's optimal growth and development within the context of group living.

5. Design, implement and evaluate experiences that promote positive development and learning for all children.

6. Integrate and use a variety of respectful, responsive teaching strategies.

7. Demonstrate acceptance of all children and families, support cultural diversity, develop a program based on anti-biased principles, and interact and relate to all persons in a responsive, respectful manner.

8. Display positive leadership qualities within an early childhood environment.

9. Use reflective and ethical practices in the classroom, advocate, access resources, practice appropriate verbal and non-verbal communication, listen and interact respectfully, and use Standard English in writing and speaking.

Suggested Semester Sequence

First Semester		Credits
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
ECED-1010	Introduction to Early Childhood Education: Children`s Development and Programs	4
MATH-1xxx	1000-level MATH course or higher	3
PSY-1010	General Psychology … OR	3
PSY-101H	Honors General Psychology	
SPCH-1000	Fundamentals of Interpersonal Communication	3
		16

EARLY CHILDHOOD EDUCATION (Continued)

Second Semester		Credits
BIO-1050	Human Biology	3
BIO-105L	Human Biology Laboratory	1
ECED-1301	Language and Literacy in an Integrated Curriculum	3
ECED-1311	Art and Creative Expression in an Integrated Curriculum	3
EDUC-1011	Introduction to Education	3
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II	–
		16

Summer Semester		Credits
EDUC-1020	Educational Technology	3
EDUC-2050	Human Diversity in Education	3
ECED-2300	Child Behavior and Guidance	3
		9

Third Semester		Credits
ECED-1321	Math and Science Inquiry in an Integrated Curriculum	3
ECED-1331	Music & Movement in an Integrated Curriculum	3
ECED-1860	Experience with Young Children in Early Childhood Settings	3
ECED-2500	Infant/Toddler Development, Relationships, and Programs	3
EDUC-1411	Individuals with Exceptionalities	3
		15

Fourth Semester		Credits
ECED-2401	Families, Communities & Schools	3
ECED-2870	Early Childhood Education Student Teaching Practicum [C]	2
ECED-2990	Early Childhood Education Student Teaching Seminar [C]	3
PSY-2110	Educational Psychology	3
		11
	PROGRAM TOTAL	67

[C] = Capstone course.

CHILD CARE ADMINISTRATION
Short-Term Certificate

The Child Care Administration short term certificate program will provide courses in leadership/advocacy, early childhood education organization and administration, and small business management to prepare students to assume leadership and management positions in the field of early childhood education in settings such as: Head Start, cooperative preschools, child care centers, and day care programs serving children from 0 through 12 years of age. Upon program completion, students will meet the education requirements of the Ohio Department of Job and Family Services day care licensing rules for center administrator and be eligible for the Ohio Child Care Resource and Referral Association Administrator Credential.

Program Manager - 216-987-2513

Program Admission Requirements:
- Program Application is required. Contact Program Manager-Teacher Education at 216-987-2513.
- High School Diploma/GED required.
- Complete ENG-1010 or ENG-1010H with grade of "C" or higher.
- Complete ECED-1010 with grade of "C" or higher.
- Applicants for Early Childhood Education short-term certificate must be able to sign the Ohio Department of Job and Family Services Statement of Nonconviction, attesting that they have never been convicted or pleaded guilty to child abuse or other crimes of violence [Sections (A)(8) or(A)(9) 109.572, or (A)(1) 5104.09 of the Ohio Revised Code] and that no child has been removed from their home [2151.353 of the Ohio Revised Code].
- Applicants must complete BCI background check before enrolling in ECED 1400.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use research-based and best practices to include and value children, families and communities; create collaborative respectful reciprocal relationships; support and involve families in advocating for their children's development and learning.
2. Ensure staff is educated and supported to design, implement, assess, and improve curriculum that is developmentally appropriate, culturally relevant, anti-biased, research-based, and aligned to the state standards and the center's mission, vision, and philosophy in order to meet the needs of critical stakeholders (students, families, staff, community, board members, etc.).
3. Develop, implement, evaluate, and revise the organization's strategic plan, short and long term goals, program structure, mission, vision, and philosophy to meet its goals and fulfill its mission involving staff, families, and other stakeholders when appropriate.

CHILD CARE ADMINISTRATION (Continued)

4. Advocate and collaborate with policy makers and the public; set staff expectations and provide professional development opportunities and feedback; communicate, motivate, involve, and delegate in a respectful, positive, and meaningful way in order to provide the community with high quality programs.
5. Plan, analyze, interpret, manage, and evaluate markets, communication, budgetary and accounting practices, resources, information, facilities, and disaster emergency preparedness in order to maintain long-term organizational sustainability and provide quality programs and services to families and children.
6. Meet the educational requirements of the Ohio Child Care Resource and Referral Association (OCCRRA) for the Ohio Administrator Credentia.

Suggested Semester Sequence

Summer Semester		Credits
ECED-1010	Introduction to Early Childhood Education: Children`s Development and Programs	4
ENG-1010	College Composition I …OR	3
ENG-101H	Honors College Composition I	
		7

First Semester		Credits
ECED-1400	Administration and Leadership in Early Childhood	4
ECED-2300	Child Behavior and Guidance	3
		7

Second Semester		Credits
BADM-1300	Small Business Management	4
ECED-2401	Families, Communities & Schools	3
		7

	PROGRAM TOTAL	21

Students who complete the short-term certificate in child care administration must contact the Ohio Child Care Resource and Referral Association (OCCRRA) for Administrator Credential.

CHILD DEVELOPMENT
Short-Term Certificate

The Child Development short term certificate provides students with a specialized comprehensive focus on preparation of applying for the Child Development Associate Credential. The sequence of courses support students with a broader understanding of child development, critical thinking skills, and practice through field experience.

Program Manager - 216-987-2513

Program Admission Requirements:
- High School Diploma/GED
- Complete ENG-1010 or ENG-101H
- Complete ECED-1010 with grade "C" or higher

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Include and value children, families and communities, create respectful reciprocal relationships, support and involve all families in their children development and learning.
2. Use observation, documentation, and other appropriate assessment tools for: planning curriculum, identifying special needs, deepening understanding of child development, communicating with families and professionals and improving teaching practices.
3. Create an inviting and enriched environment that supports children optimal growth and development within the context of group living.
4. Design, implement and evaluate experiences that promote positive development and learning for all children.
5. Integrate and use a variety of respectful, responsive teaching strategies.
6. Demonstrate acceptance of all children and families, support cultural diversity, develop a program based on anti-biased principles and interact and relate to all persons in a responsive, respectful manner.
7. Display positive leadership qualities within an early childhood environment.
8. Use reflective and ethical practices in the classroom, advocate, access resources, practice appropriate verbal and non-verbal communication, listen and interact respectfully, use Standard English in writing and speaking.
9. Support the diverse ways in which children learn by interpreting and applying knowledge of child growth and development.

Suggested Semester Sequence

Summer Semester		Credits
ECED-1010	Introduction to Early Childhood Education: Children`s Development and Programs	4
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
		7

First Semester		Credits
ECED-1301	Language and Literacy in an Integrated Curriculum [1]	3
ECED-2300	Child Behavior and Guidance	3
		6

Second Semester		Credits
ECED-1860	Experience with Young Children in Early Childhood Settings	3
ECED-2401	Families, Communities & Schools	3
ECED-2600	CDA Professional Portfolio	1
		7

	PROGRAM TOTAL	20

[1]ECED 1010 Can be taken concurrently

INFANT/TODDLER

Short-Term Certificate

The infant/toddler certificate provides students with a specialized focus on the unique strengths and needs of infants and toddlers. Students will study the comprehensive development of the young child, birth to three years, with a focus on understanding current brain research and best caregiving practices. The practicum component of the program will support the students as they transfer their learning to their work with young children. The program is available for early childhood educators, parents, administrators and health care professionals. The certificate is 19 credit hours, with 10 of the credit hours applying to the Associate of Applied Science in Early Childhood Education.

Program Manager - 216-987-2513

Program Admission Requirements:
- Program Application is required - contact Infant/Toddler Certificate Coordinator.
- High School Diploma/GED required.
- Complete ENG-1010 or ENG-101H with grade of "C" or higher.
- ECED-1010
- ECED-2500

Other Information:
- Applicants for Early Childhood Education must be able to sign the Ohio Department of Human Services Child Care Conviction Statement, attesting that they have never been convicted or pleaded guilty to child abuse or other crimes of violence (Sect. 5104.09 Ohio Revised Code) and that no child has been removed from their home (Sect.2151.353 Ohio Revised Code).
- Complete BCI check (see page 73) before enrolling in ECED-1550.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Developmental Knowledge. Use comprehensive developmental knowledge and observation to design, implement and evaluate individual and group curriculum experiences for infants and toddlers.

2. Environment. Create respectful, healthy and safe physical and interpersonal environments for infants and toddlers, utilize responsive verbal and non-verbal caregiver strategies, select appropriate materials and follow sanitary guidelines.

3. Family and Community. Design experiences and utilize caregiver strategies that support family involvement and reciprocal relationships.

4. Professionalism. Perform professionally and ethically, use self reflection and knowledge, access resources and use Standard English in writing and speaking.

Suggested Semester Sequence

First Semester		Credits
ECED-1010	Introduction to Early Childhood Education: Children`s Development and Programs	4
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	_
		7

Second Semester		Credits
ECED-1540	Programming and Adjustments in Infant/Toddler Care	3
ECED-1550	Experiences with Infants	1
ECED-1850	Infants in Early Childhood Setting Practicum	2
ECED-2500	Infant/Toddler Development, Relationships, and Programs	3
		_
		9

Summer Semester		Credits
ECED-1570	Experience with Toddlers	1
ECED-1870	Toddlers in Early Childhood Setting Practicum	2
		3
	PROGRAM TOTAL	19

ELECTRICAL/ELECTRONIC ENGINEERING TECHNOLOGY

Associate of Applied Science degree in Electrical/Electronic Engineering Technology

The ever-changing and increasing field of Electronic Technology is expanding the need for highly trained electronic technicians. These electronic technicians assist engineers and scientists in various electronic environments such as electronic instrumentation and control, aerospace research, electronic communications, process control, robotics and computer repair. Students completing the program gain the theoretical knowledge and skills that enable success in these various electronic fields.

Program Admission Requirements:
- High School Diploma/GED
- Eligibility for ENG-1010
- Eligibility for MATH-1280 or higher
- Concentrations available: Electrical/Electronic Engineering Basic, Bio-Medical, Digital Communications

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Demonstrate effective oral and written communication skills using appropriate technology.

2. Work independently and collaboratively as an effective member of a team to complete projects.

3. Identify, acquire, evaluate and ethically use technical information from multiple sources.

4. Exhibit ethical and social responsibilities and the need for lifelong learning in the engineering profession.

ELECTRICAL/ELECTRONIC ENGINEERING TECHNOLOGY (Continued)

1. Conduct, analyze and interpret electronic experiments using electronic instrumentation standard measurements.

2. Apply knowledge of circuit analysis/design and use computer programming languages and software to solve a stated problem in analog or digital electronics.

3. Apply knowledge of physical sciences and practice of engineering standards to build, test, operate and maintain electrical and electronic systems.

4. Use algebra, trigonometry, or applied calculus to conduct experiments of electrical and electronic systems

Suggested Semester Sequence

First Semester		Credits
EET-1140	Productivity Tools for Engineering	2
EET-1160	Direct Current Circuits I [1]	2
EET-1170	Direct Current Circuits II [1]	2
EET-1180	Surface Mount Soldering	1
EET-1240	Digital Circuits/Microprocessors I	3
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I [2]	
MATH-1280	Advanced Intermediate Algebra	5
		18

Second Semester		Credits
EET-1210	AC Electric Circuits	3
EET-2140	Digital Circuits/Microprocessors II	3
MATH-1510	Trigonometry [2] … OR	3
MATH-151H	Honors Trigonometry	
PHYS-1210	College Physics I	4
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II … OR	
ENG-2151	Technical Writing	
		16

Third Semester		Credits
EET-2111	Industrial Electronics I	3
EET-2120	Electronics I	3
EET-2170	Signal Analysis	3
EET-2241	Microprocessor and Hardware Interfacing with C Programming	3
ITNT-2300	Networking Fundamentals	3
SPCH-1000	Fundamentals of Interpersonal Communication	3
		18

Fourth Semester		Credits
EET-2220	Electronics II	3
EET-2290	Electrical Design Project [C]	2
EET-2500	Instrumentation and Control	3
EET-xxxx	EET elective course	3
PHIL-2020	Ethics … OR	3
PHIL-202H	Honors Ethics	
EET-2150	Printed Circuit Layout	1
		15

	PROGRAM TOTAL	67

ELECTIVES

Technical Electives		Credits

Select from the following courses to fulfill EET elective requirements. Note: EET-1100 and EET-1150 are only open to students in the Youth Technology Academy program.

EET 1100	Introduction to Robotics	2
EET 1150	Basic Robotics with Math	2
EET 2520	Programmable Logic Controllers	3
EET 2700	Introduction to Hydrogen Fuel Cells and Alternative Energy	3
EET 2180	EET Applied Calculus	3
EET 2710	Solar Power, Energy Storage and Conversion	3

[1]Consecutive eight week course.
[2]MATH-1580 and MATH-1610 will be accepted in place of MATH-1280 and MATH-1510.
[C] = Capstone course.

ELECTRONIC ENGINEERING TECHNICIAN
Certificate of Proficiency

The Electronic Engineering Technician certificate will provide the student basic knowledge of electrical/electronic theory which can assist in obtaining a credential documenting partial completion in coursework towards an associate's degree. The certificate program supports an associate's degree that will transfer via 2 + 2 to bachelor degree programs at Akron University, Cleveland State University and others.

Degree: Students may apply credits towards the Associate of Applied Science Degree in Electrical/Electronic Engineering Technology.

Program Admission Requirements:
- High School Diploma/GED
- Eligibility for ENG-1020
- Eligibility for MATH-1280 or higher

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Demonstrate skills supported by knowledge of elementary electronic circuits.

Suggested Semester Sequence

First Semester		Credits
EET-1140	Productivity Tools for Engineering	2
EET-1160	Direct Current Circuits I	2
EET-1170	Direct Current Circuits II	2
EET-1180	Surface Mount Soldering	1
EET-1240	Digital Circuits/Microprocessors I	3
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I [2]	
MATH-1280	Advanced Intermediate Algebra	5
		18

ELECTRONIC ENGINEERING TECHNICIAN (Continued)

Second Semester		Credits
EET-1210	AC Electric Circuits	3
ITNT-2300	Networking Fundamentals	3
MATH-1510	Trigonometry [2] … OR	3
MATH-151H	Honors Trigonometry [2]	
DEGR-xxxx	Select 1 elective from below list	3
		12
	PROGRAM TOTAL	30

[1]Consecutive eight week course.
[2]MATH-1580 and MATH-1610 will be accepted in place of MATH-1280 and MATH-1510.

ELECTIVES

Electives		Credits
A student is required to take one of the electives.		
BIO-1050	Human Biology	3
EET-2140	Digital Circuits/Microprocessors II	3
ENG-2151	Technical Writing	3
PHYS-1210	College Physics I	4

ELECTRICAL/ELECTRONIC ENGINEERING TECHNOLOGY (Bio-Medical)

Associate of Applied Science degree in Electrical/Electronic Engineering Technology with a concentration in Bio-Medical Engineering

Technology has impacted biomedical equipment in the health field. Bio-medical engineering technicians are needed to perform safety checks, preventive maintenance, calibration and repair various bio-medical pieces of equipment. This general bio-medical equipment may involve infusion pumps, ventilators, patient monitors, electrosurgery units, defibrillators and other medical apparatus. Students completing the bio-medical program in electrical engineering technology will find jobs in hospitals, with medical equipment manufacturers or third-party service organizations associated with hospitals.

Program Admission Requirements:
- High School Diploma/GED
- Eligibility for ENG-1010
- Eligibility for MATH-1280 or higher

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use organizational skills for time management, scheduling, and resource allocation to meet and satisfy organizational, quality and customer regulatory requirements.

2. Work independently and as a member of a diverse team while maintaining a high-level of professionalism.

3. Communicate in a clear, concise written and verbal manner to all levels of clinical and non-clinical staff.

4. Utilize information gathered through the troubleshooting process and develop and communicate an action plan to correct medical equipment, patient and user issues in a timely and efficient manner.

5. Perform all aspects of medical equipment support and service, including but not limited to inspection, repair, installation and networking in the healthcare industry.

6. Sit for the certified Bio Medical Equipment Technician Exam.

Suggested Semester Sequence

First Semester		Credits
EET-1140	Productivity Tools for Engineering	2
EET-1160	Direct Current Circuits I [1]	2
EET-1170	Direct Current Circuits II [1]	2
EET-1180	Surface Mount Soldering	1
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MATH-1280	Advanced Intermediate Algebra [2]	5
		15

Second Semester		Credits
BIO-1050	Human Biology	3
EET-1210	AC Electric Circuits	3
EET-1240	Digital Circuits/Microprocessors I	3
ENG-2151	Technical Writing	3
MATH-1510	Trigonometry or higher [2] … OR	3
MATH-151H	Honors Trigonometry [2]	
PHYS-1210	College Physics I	4
		19

Third Semester		Credits
EET-2111	Industrial Electronics I	3
EET-2120	Electronics I	3
EET-2170	Signal Analysis	3
EET-2400	Biomedical Instrumentation I	3
ITNT-2300	Networking Fundamentals	3
		15

Fourth Semester		Credits
EET-2220	Electronics II	3
EET-2410	Biomedical Instrumentation II	3
EET-2490	Biomedical Design Project [C]	2
SPCH-1000	Fundamentals of Interpersonal Communication	3
Arts & Hum/Soc & Beh Sci (see AAS Degree requirements)		3
		14

Summer Semester		Credits
EET-2901	Clinical Internship	3
		3
	PROGRAM TOTAL	66

[1]Consecutive eight week course.
[2]MATH-1580 and MATH-1610 will be accepted in place of MATH-1280 and MATH-1510.

[C] = Capstone course.

ELECTRICAL/ELECTRONIC ENGINEERING TECHNOLOGY (Computer Networking Hardware)

Associate of Applied Science degree in Electrical/Electronic Engineering Technology with a concentration in Computer Networking Hardware

Students will be prepared for careers dealing with network hardware systems analysis, planning and implementation. Students will gain the necessary skills to design, build and maintain small to medium size networks and manage network hardware systems. Skills acquired will assist students in preparing to take industry certification exams.

Program Admission Requirements:
- High School Diploma/GED not required, but highly recommended
- Eligibility for ENG-1010 or ENG-101H
- Eligibility for 1000-level MATH-1000 course

Other Information:
- Skills acquired prepare students to take industry certification exams.
- Certificate available in Computer Maintenance Technology (A+ Certification).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate effectively utilizing verbal, written and presentation skills in person, on the phone, and via the Internet with all levels in the organization.

2. Communicate appropriately with diverse audiences to provide high level customer service to internal and external constituents.

3. Work independently and effectively within a team to meet the needs of the organization.

4. Operate within diverse business cultures with professionalism, integrity and accountability.

5. Demonstrate ethical behavior and recognize legal issues.

6. Adapt to change within their profession by demonstrating a commitment to continuous learning and the flexibility to deal with different requirements from different clients with a wide range of personality styles and prior computer knowledge.

7. Plan, organize, and prioritize tasks in order to meet project deadlines.

8. Apply analytical, critical and creative thinking and problem solving/troubleshooting techniques to develop effective information technology solutions in the context of business needs.

9. Apply fundamental concepts of computer hardware, operating systems, business applications, networking, security, backup and recovery procedures to troubleshoot, maintain and support PC hardware and software to ensure an efficient and effective operation.

10. Apply knowledge of network hardware, the Open Systems Interconnection (OSI) Model, protocols, diagnostic tools and troubleshooting to assist in the design, selection of equipment, installation, configuration, testing and optimization of an organization's production network to ensure appropriate access and response time.

11. Use knowledge of network backup hardware and software to implement, maintain, and execute an organization disaster recovery plans.

12. Sit for A+ and CCNA certification exam.

Suggested Semester Sequence

Summer Semester		Credits
EET-1015	Introduction to Computer Maintenance and Repair	3
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
IT-1025	Information Technology Concepts for Programmers	3
		9

First Semester		Credits
BADM-1020	Introduction to Business	3
EET-1035	Operating Systems and Software for PC Technicians	4
EET-1055	Computer Hardware Support	4
ITNT-2300	Networking Fundamentals	3
		14

Second Semester		Credits
BADM-1050	Professional Success Strategy	3
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
ITNT-2310	TCP/IP	3
ITNT-2320	Network Administration I	3
		12

Third Semester		Credits
EET-1302	Cisco I Basic Networking Technologies [1]	3
EET-1312	Cisco II Basic Routing and Switching [1]	3
ENG-2151	Technical Writing	3
MATH-1xxx	1000-level MATH course or higher	3
Arts & Hum/Soc & Beh Sci (see AAS Degree requirements)		3
		15

Fourth Semester		Credits
EET-2302	Cisco III Intermediate Routing and Switching	3
EET-2312	Cisco IV Basic WAN Technologies	3
ITNT-2990	Networking Capstone [C]	3
Natural Science (lecture)		3
		12

| | PROGRAM TOTAL | 62 |

[1] Consecutive eight week course.

[C] = Capstone course.

COMPUTER MAINTENANCE TECHNOLOGY

Certificate of Proficiency

Students will be prepared with the knowledge and skills essential for a career as an entry-level service technician. They will be prepared to service computers and peripherals by discovering how to install, configure, diagnose, repair, upgrade and maintain microcomputers. Skills acquired will assist students in preparing to take industry A+ Certification exams. A+ Certification is an industry recognized credential that distinguishes one as a knowledgeable service professional. Degree: Students may apply credits toward the Computer Networking, Hardware concentration in the Electric-Electronic Engineering degree or the Information Technology degree with a concentration in Networking Software.

Program Admission Requirements:
- High School Diploma/GED
- Complete IT-1010 or IT-101H

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate effectively utilizing verbal, written and presentation skills in person, on the phone, and via the Internet with all levels in the organization.

2. Communicate appropriately with diverse audiences to provide high level customer service to internal and external constituents.

3. Work independently and effectively within a team to meet the needs of the organization.

4. Operate within diverse business cultures with professionalism, integrity and accountability.

5. Demonstrate ethical behavior and recognize legal issues.

6. Adapt to change within their profession by demonstrating a commitment to continuous learning and the flexibility to deal with different requirements from different clients with a wide range of personality styles and prior computer knowledge.

7. Plan, organize, and prioritize tasks in order to meet project deadlines.

8. Apply analytical, critical and creative thinking and problem solving/troubleshooting techniques to develop effective information technology solutions in the context of business needs.

9. Apply fundamental concepts of computer hardware, operating systems, business applications, networking, security, backup and recovery procedures to troubleshoot, maintain and support PC hardware and software to ensure an efficient and effective operation.

10. Prepared to sit for A+ certification exam.

Suggested Semester Sequence

Program Admissions Requirements Semester		Credits
IT-1010	Introduction to Microcomputer Applications [1] … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	3
		3

Summer Semester		Credits
EET-1015	Introduction to Computer Maintenance and Repair	3
IT-1020	Information Technology Concepts … OR	2
IT-1025	Information Technology Concepts for Programmers	3
		6

First Semester		Credits
EET-1035	Operating Systems and Software for PC Technicians	4
EET-1055	Computer Hardware Support	4
ITNT-2300	Networking Fundamentals	3
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	3
		14

Second Semester		Credits
ITNT-2310	TCP/IP	3
ITNT-2320	Network Administration I	3
MATH-1xxx	1000-level MATH course or higher	3
BADM-1050	Professional Success Strategy	3
		12

| | PROGRAM TOTAL | 35 |

[1] Credit-by-exam is available through the IT department to meet this requirement. Written departmental approval from the IT department required.

ELECTRICAL/ELECTRONIC ENGINEERING TECHNOLOGY (Digital Communications, Including RF, Radio Frequency)

Associate of Applied Science degree in Electrical/Electronic Engineering Technology with a concentration in Digital Communications, Including RF, Radio Frequency

Graduates of the Digital Communications concentration in the Electronic Engineering Technology program can work as technical specialists in the broad and diverse field of communications, in such areas as installation, operation and maintenance of (principally) digital and analog communications systems. The program emphasizes both theory and application and consists of course work and lab work in basic electronic circuits, digital and microprocessor systems, networking, analog and digital communications circuits and system and Communications media (fiber optics, broadband cable, twisted pair and microwave systems.); With several additional courses, concentration majors can transfer to some universities in the 2+2 program (EET-2241 Microprocessor and Hardware Interfacing with C Programming Language and EET-2180 EET Applied Calculus).

With departmental approval regarding prerequisites and/or prerequisite-based work experience, a candidate can seek an award by taking and passing the four concentration courses. These courses include EET-2170 Signal Analysis, EET-2131 Digital Communications Fundamentals, EET-2231 Wired and Wireless Communications and EET-2591 Communications Design Project.

Program Admission Requirements:
- High School Diploma/GED
- Eligibility for ENG-1010 College Composition
- Eligibility for MATH-1280 Intermediate Algebra with "C" or higher, or appropriate placement test score.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Demonstrate effective oral and written communications using appropriate technology and terminology to various audiences.
2. Work independently and as an effective member of a team to complete projects.
3. Explain professional, ethical and social responsibilities and the need for lifelong learning in the engineering profession.
4. Apply current knowledge of math, science, engineering, fiber, radio frequency and networking technology to build/modify troubleshoot, install, operate and maintain equipment using schematic and/or mechanical drawings, instrumentation, productivity tools, safety and other appropriate standards.
5. Sit for certification(s).

Suggested Semester Sequence

First Semester		Credits
EET-1140	Productivity Tools for Engineering	2
EET-1160	Direct Current Circuits I [1]	2
EET-1170	Direct Current Circuits II [1]	2
EET-1180	Surface Mount Soldering	1
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MATH-1280	Advanced Intermediate Algebra [2]	5
		15

Second Semester		Credits
EET-1210	AC Electric Circuits	3
EET-1240	Digital Circuits/Microprocessors I	3
ITNT-2300	Networking Fundamentals	3
MATH-1510	Trigonometry [2] … OR	3
MATH-151H	Honors Trigonometry [2]	
PHYS-1210	College Physics I	4
		16

Third Semester		Credits
EET-2120	Electronics I	3
EET-2131	Digital Communication Fundamentals	3
EET-2140	Digital Circuits/Microprocessors II	3
EET-2170	Signal Analysis	3
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II … OR	
ENG-2151	Technical Writing	
ITNT-2310	TCP/IP	3
		18

Fourth Semester		Credits
EET-2220	Electronics II	3
EET-2231	Wired and Wireless Communications	3
EET-2591	Communications Design Project	2
PHIL-2020	Ethics … OR	3
PHIL-202H	Honors Ethics	
PHYS-1220	College Physics II	4
		15
	PROGRAM TOTAL	64

[1]Consecutive eight week course.
[2]MATH-1580 and MATH-1610 will be accepted in place of MATH-1280 and MATH-1510.
$\boxed{C}$ = Capstone course.

ELECTIVES		Credits
The below additional courses are highly recommended for 2+2 transfer students.
EET 2180	EET Applied Calculus	3
EET 2241	Microprocessor and Hardware Interfacing with C Programming	3

ELECTRICAL/ELECTRONIC ENGINEERING TECHNOLOGY (Telecommunications)

This program has been re-named Electrical/Electronic Engineering Technology (Digital Communications, Including RF, Radio Frequency), see above.

ELECTRONEURODIAGNOSTIC TECHNOLOGY

Associate of Applied Science degree in Electroneurodiagnostic Technology

The Associate of Applied Science degree prepares the student for an entry-level position as an Electroneurodiagnostic Technician for employment in hospitals, doctors' offices and clinics. Electroneurodiagnostic technology is a profession devoted to the recording and study of electrical activity of the brain and nervous system. Used for medical evaluation and research, it includes procedures that assess the function of the nervous system. Technologists record electrical activity arising primarily from the brain, spinal cord and peripheral nerves. This program consists of on-campus didactic and laboratory instruction, as well as off-campus clinical experiences at our affiliated health care institutions.

Program Manager – 216-987-5654

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Complete ENG-1010 or ENG-101H or ENG-1020 with "C" or higher.
- Complete MA-1020 with "C" or higher
- Complete the following: BIO-1100; or CHEM-1010 and 1020; and BIO-2331 ("C" grade or higher in each). It is recommended that BIO-2341 be completed prior to entering the program.
- Complete MATH-1141 or higher. MATH-1820/2820 may not be used to meet this requirement.
- GPA required: 2.0 admissions/core courses requirements, 2.5. overall.

Other Information:
- 16 students accepted per year.
- TOEFL Test. Applicants who are non-native speakers of English as required to have completed the Test of English as a Foreign Language (TOEFL) with a mimimum internet based test (iBT) score of 24 in the speaking component and a minimum iBT score of 22 in the listening component. This requirement is due to the program's professional technical standards for written and verbal communication skills. Preparation for the test is highly recommended. Cuyahoga Community College offers a preparation course for the TOEFL. Preparationfor scheduling and costs incurred for the TOEFL are the sole responsibility of the student. Visit www.ets.org for more information on the test. This test must be taken even if you have become an American citizen. Students should consider taking the following coursework to assist in attaining the minimal score: ESL Speaking English III and ESL: TOEFL Preparation.
- Criminal background check required (see page 73).
- Clinical observation visit required (see details in application packet).
- Pre-admission status may be offered if admissions requirements are incomplete; however, no student will be admitted into the program until all prerequisites and observation are successfully completed. Contact Program Manager at 216-987-5654.
- Core courses may be repeated only once to improve a grade below "C".

- Courses used as prerequisites, core courses, as well as all Electroneurodiagnostic specialty courses, MUST have a traditional letter grade. The Pass/No Pass (P/NP) grading option for prerequisites, core and specialty courses will NOT be accepted to meet program graduation requirements.
- Candidates will be required to present documentation of good health verified by a physician examination and immunizations prior to being granted permission to enter clinical training and CPR certification.
- Accepted applicants must attend a group information session prior to Fall Semester.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Effectively communicate to patients and families when explaining various Electroneurodiagnostic procedures.

2. Manage and budget time to perform various Electroneurodiagnostic procedures according to current guidelines.

3. Listen, speak and contribute with team members while performing various Electroneurodiagnostic procedures in different clinical settings.

4. Recognize technical and clinical changes during data acquisition and provide appropriate documentation.

5. Demonstrate knowledge and performance of all Electroneurodiagnostic testing procedures.

Suggested Semester Sequence

First Semester		Credits
BIO-1100	Introduction to Biological Chemistry [1]	3
BIO-2331	Anatomy and Physiology I [2]	4
END-1300	Introduction to Electroneurodiagnostic Technology	2
END-1350	Introduction to Electroencephalography (EEG)	3
MATH-1141	Applied Algebra and Mathematical Reasoning or higher	3
MA-1020	Medical Terminology I	3
		18

Second Semester		Credits
BIO-2341	Anatomy and Physiology II [2]	4
END-1450	Intermediate Electroencephalography (EEG)	3
END-1500	Basic Evoked Potentials	3
END-1910	END Directed Practice I	4
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	_
		17

Summer Semester		Credits
END-2400	Intraoperative Monitoring for Electroneurodiagnostic Technologists	2
END-2450	Neonatal/Pediatric Electroneurodiagnostic	3
END-2911	END Directed Practice II	2
		7

ELECTRONEURODIAGNOSTIC TECHNOLOGY (Continued)

Third Semester		Credits
END-2300	Nerve Conduction Studies	3
END-2411	Neurophysiology of Electroencephalography/ Sleep Disorders [3]	3
END-2930	END Directed Practice IV	2
PHIL-2050	Bioethics	3
Arts & Hum/Soc & Beh Sci (see AAS Degree requirements)		3
		14

Fourth Semester		Credits
END-2350	Fundamentals of Polysomnography [4] … OR	4
END-2320	Intermediate Nerve Conduction Studies	3
END-2920	END Directed Practice III	4
END-2990	Electroneurodiagnostic Capstone C	1
Communication...(See AAS Degree requirements)		3
		11 - 12

PROGRAM TOTAL 67 - 68

[1]CHEM-1010 and 1020 may be taken in place of BIO-1100.
[1]Requires sufficient score on Biology placement test to take this course in the same semester as BIO-1100. BIO-233A and BIO-233B may be taken in place of BIO-2331.
[3]END 1440 will be accepted in place of END 2411.
[4]END 1410, 1421, 142L, & 1430 together will be accepted in place of END 2350.

C = Capstone course.

EMERGENCY MEDICAL TECHNOLOGY

Associate of Applied Science degree in Emergency Medical Technology

This program is designed for individuals providing emergency medical service to the community. Three levels of training are available: EMT-B, EMT-P and Associate of Applied Science degree in Emergency Medical Technology. Certification is provided by the National Registry of Emergency Medical Technicians (NREMT) and the Ohio Dept. of Public Safety, Division of EMS. The graduate may function on the levels required by Ohio Law to provide basic and advanced life support under the direction of a physician, as well as to provide supervision of operations in an emergency service. A criminal background check must be completed through a program approved source prior to participation in clinical or field experiences. State of Ohio EMS Accreditation number: 312 .

Program Manager – 216-987-4449

Program Admission Requirements Application may be submitted to the Health Careers Enrollment Center after meeting the English and Math requirements:

- High School Diploma/GED
- Complete ENG-1010 or ENG-101H with "C" or higher
- Complete MATH 1000 level or higher with "C" or higher.
- GPA required: 2.0 admissions requirements, 2.0 overall
- One year EMT-Basic experience preferred for entry into EMT-P.

- EMT-Basic Ohio certification prior to first day of EMT-2330 Paramedic Theory I.
- Signed felon-misdemeanor statement.
- EMT Basic certification and Program Manager approval for all courses, except EMT-1310 CPR and EMT-1400 Paramedic Success.

Other Information:
- 60 students accepted per year.
- Criminal background check required (see page 73).
- EMT-Basic available at Eastern, Metropolitan, Western & Westshore; EMT-P available at Eastern, Metropolitan, Western, Westshore and offsite locations.
- Courses offered as listed in schedule book. Many are flexible; contact Program Manager for information – 216-987-4449.
- Must be 18 years of age or 17 years of age and high school senior for EMT-Basic.
- All EMT classes must be completed with "C" or higher.
- Clinical components of all classes must be completed within one year.
- Admission to the program may be denied or revoked for failure to comply with program policies and procedure or Ohio Revised/Administrative Code 4765.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Utilize various non-verbal, verbal, written and electronic communication methods to interact with a diverse group of populations.
2. Exhibit professional, ethical and compassionate behavior when interacting with diverse groups of patients and their families, health care professionals, and community members.
3. Use patient assessment skills to identify mechanism of injury or nature of illness to determine therapeutic modalities for the medical and trauma patient, and establish the priority of interventions needed to improve the patient's outcome within a Paramedic's scope of practice.
4. Demonstrate skill proficiency in pre-hospital and inter-facility assessments and treatments using advanced medical techniques and equipment available within a Paramedic's scope of practice.
5. Identify current and potential hazards and perform duties maintaining a safe work environment for themselves, co-workers, patients and bystanders.
6. Use strategic management and ethical decision making skills to lead, schedule, and staff Emergency Medical Services (EMS) Systems.
7. Effectively resolve conflict and solve problems, and utilize personal organizational skills to excel in a fast-paced, dynamic work setting.
8. Apply critical thinking skills to identify and adapt to potential changes within the dynamic field of Emergency Medical Services.

EMERGENCY MEDICAL TECHNOLOGY (Continued)

9. Value wellness and participate in activities to promote sound physical, psychological, and spiritual health in themselves, patients and their families, health care professionals and community members.

10. Sit for the National Registry of Emergency Medical Technician Basic Exam, National Registry of EMTs Paramedic Certification Exam.

Suggested Semester Sequence

First Semester		Credits
BIO-2331	Anatomy and Physiology I [1]	4
EMT-1302	Emergency Medical Technician - Basic	6
EMT-130L	EMT Basic Practical Lab	1
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
HTEC-1120	Critical Thinking in Healthcare	1
		15

Second Semester		Credits
BIO-2341	Anatomy and Physiology II	4
EMT-1320	Heavy Rescue [2] … OR	2
EMT-xxxx	EMT elective course [3]	
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II	
MATH-1xxx	1000-level MATH course or higher [4]	3
MA-1020	Medical Terminology I	3
UST-1010	Introduction to Urban Studies	3
		18

Third Semester		Credits
EMT-2330	Paramedic Theory I [5]	6
EMT-2350	Paramedic Theory III [5]	6
PSY-1010	General Psychology … OR	3
PSY-101H	Honors General Psychology	
		15

Fourth Semester		Credits
EMT-2340	Paramedic Theory II [5]	6
EMT-2360	Paramedic Theory IV [5]	6
PSY-2020	Life Span Development … OR	4
PSY-202H	Honors Life Span Development	
		16

Summer Semester		Credits
EMT-2370	Paramedic Theory V [C]	5
		5

| | PROGRAM TOTAL | 69 |

ELECTIVES

Additional Recommended Elective		Credits

EMT department strongly recommends students take EMT-1330 Defensive Driving, in addition to required coursework.

| EMT 1330 | Defensive Driving - EMT | 1 |

[1]Requires passing Science Assessment Test or prerequisite BIO 1100.
[2]Students who successfully complete Tri-C's Fire Academy will receive credit for this course. Students not planning to pursue

Firefighter certification may use other approved courses to meet this requirement. Requirement may be waived/substituted with written permission from department for those who have other advanced training such as military training, police academy training, or experience working as a firefighter/paramedic.
[3]For EMT-Basic ST certificate students, EMT-1400 Paramedic Success meets this requirement
[4]Nursing Transfer; CSU BA in Public Safety Management (PSM) Transfer consider MATH-1250 or MATH-1410.
[5]Consecutive eight week course.

[C] = Capstone course.

EMERGENCY MEDICAL TECHNICIAN-BASIC

Short-Term Certificate

This program is designed for individuals interested in pursuing a career as an Emergency Medical Technician. It prepares students for entry level positions with ambulance and Emergency Medical Services (EMS). As many EMS services are a component of fire departments, it is also important for those pursuing a career as a firefighter. Students who successfully complete this program are eligible to take the National Registry of EMT Basic examination. Successful completion of this examination is necessary for state of Ohio EMT-Basic certification. A criminal background check must be completed through a program approved source prior to participation in clinical or field experiences.

Program Manager – 216-987-4449

Financial Assistance funds cannot be applied towards this program.

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- Submit application at least two weeks before EMT-1302/130L EMT Basic class begins.
- Must be 18 years old or 17 years old and a high school senior to enroll in EMT-1302/130L.
- Eligibility for ENG-0990.
- Eligibility for MATH-0950.

Other Information:
- 215 students accepted per year.
- Students must achieve a grade of "C" in all certificate courses to be awarded the certificate.
- EMT-Basic available at Eastern, Metropolitan, Western and Westshore Campuses.
- All EMT classes must be completed with "C" or higher.
- Criminal background check required (see page 73).
- Admission to the program may be denied or revoked for failure to comply with program policies and procedure of Ohio Revised / Administrative Code 4765.

EMERGENCY MEDICAL TECHNICIAN-BASIC (Continued)

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use correct medical terminology when communicating with health care professionals regarding patient conditions and to completely and accurately document patient care information that meets federal, state and organizational requirements.

2. Exhibit professional, ethical and compassionate behavior when interacting with diverse groups of patients and their families, health care professionals, and community members.

3. Apply knowledge of anatomy, physiology, medicolegal and ethical issues, basic patient assessment skills, and basic medical equipment to identify mechanism of injury or nature of illness to determine therapeutic modalities for the medical and trauma patient and establish the priority of interventions needed to improve the patient's outcome within the EMT Basic level's scope of practice.

4. Demonstrate skill proficiency in pre-hospital assessments and treatments using basic medical techniques and equipment available within the EMT Basic level's scope of practice.

5. Identify current and potential hazards and perform duties maintaining a safe work environment for themselves, co-workers, patients and bystanders.

6. Use tactical management, critical thinking and ethical decision making skills to lead and operate an Emergency Medical Services (EMS) Unit.

7. Identify stress within myself and co-workers and use appropriate stress management techniques to ensure physical and emotional health.

8. Sit for the National Registry of Emergency Medical Technician Basic Exam.

Suggested Semester Sequence

First Semester		Credits
EMT-1302	Emergency Medical Technician - Basic	6
EMT-130L	EMT Basic Practical Lab	1
EMT-1400	Paramedic Success [1]	4
		11
	PROGRAM TOTAL	11

[1]BIO-2331 and BIO-2341 will be accepted in place of EMT-1400. BIO-2331 and BIO-2341 required for the AAS in Emergency Medical Technology. Note: BIO-2330 and BIO-2340 together taken prior to Fall 2011 will also be accepted in place of EMT-1400.

PARAMEDIC
Short-Term Certificate

This program is designed for Emergency Medical Technicians interested in pursuing Paramedic certification. It prepares students to advance their career with ambulance and Emergency Medical Services (EMS). As many EMS services are a component of fire departments, it is also important for those pursuing a career as a firefighter. Students who successfully complete this program are eligible to take the National Registry of EMT Paramedic examination. Successful completion of this examination is necessary for State of Ohio Paramedic certification. A criminal background check must be completed through a program approved source prior to participation in clinical or field experiences.

Program Manager – 216-987-4449

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED Recommended
- Eligibility for ENG-1010 College Composition I.
- Eligibility for MATH-0980 Intensified Beginning Algebra.
- Candidates must have completed the EMT Basic Short Term Certificate. Contact the Health Careers Enrollment Center (216-987-4247) for comprehensive admissions information and an application packet.
- GPA required: 2.00 certificate courses
- One year EMT Basic experience recommended for entry into EMT Paramedic
- EMT-Basic Ohio Certification prior to first day of EMT-2330.
- One year EMT-Basic experience recommended for entry into EMT Paramedic.
- Signed felon-misdemeanor statement.
- Certain clinical sites require drug screen.

Other Information:
- All EMT classes must be completed with "C" or higher.
- Students must achieve a grade of "C" in all certificate courses to be awarded the certificate.
- EMT-P available at Eastern, Metropolitan, Western, Westshore Campuses and off-site locations.
- All EMT classes must be completed with "C" or higher.
- Criminal background check required (see page 73).
- Admission to the program may be denied or revoked for failure to comply with program policies and procedure of Ohio Revised / Administrative Code 4765.
- Program Manager: 216-987-4449.

PARAMEDIC (Continued)

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use correct medical terminology when communicating with health care professionals regarding patient conditions and to completely and accurately document patient care information that meets federal, state and organizational requirements.

2. Exhibit professional, ethical and compassionate behavior when interacting with diverse groups of patients and their families, health care professionals, and community members.

3. Use patient assessment skills to identify mechanism of injury or nature of illness to determine therapeutic modalities for the medical and trauma patient and establish the priority of interventions needed to improve the patient's outcome within Paramedic's scope of practice.

4. Demonstrate skill proficiency in pre-hospital assessments and treatments using advanced medical techniques and equipment available within the Paramedic's scope of practice.

5. Identify current and potential hazards and perform duties maintaining a safe work environment for themselves, co-workers, patients and bystanders.

6. Use tactical management, critical thinking and ethical decision making skills to lead and operate an Emergency Medical Services (EMS) Unit.

7. Identify stress within oneself and co-workers and use appropriate stress management techniques to ensure physical and emotional health.

8. Prepared to sit for the National Registry of EMTs Paramedic Certification Exam.

Suggested Semester Sequence

Program Admissions Requirements Semester		Credits
EMT-1400	Paramedic Success [1]	4
		4

First Semester		Credits
EMT-2330	Paramedic Theory I [2,3]	6
EMT-2350	Paramedic Theory III [3]	6
		12

Second Semester		Credits
EMT-2340	Paramedic Theory II [3]	6
EMT-2360	Paramedic Theory IV [3]	6
		12

Summer Semester		Credits
EMT-2370	Paramedic Theory V	5
		5

| | PROGRAM TOTAL | 33 |

[1]BIO-2331 and BIO-2341 will be accepted in place of EMT-1400. BIO-2331 and BIO-2341 required for the AAS in Emergency Medical Technology. Note: BIO-2330 and BIO-2340 together taken prior to Fall 2011 will also be accepted in place of EMT-1400.
[2]Requires program application acceptance; Departmental approval;
[3]Consecutive 8 week courses

ENVIRONMENTAL, HEALTH AND SAFETY TECHNOLOGY

Associate of Applied Science degree in Environmental, Health and Safety Technology

This program prepares students for a variety of careers in the environmental, health and safety technology (EHST) field. Students who enjoy working outdoors can choose the Environmental Field Technology option, which emphasizes skills in air monitoring; water, ground water and soil sampling; chemical emergency response actions; and generally evaluating and cleaning up environmental contamination. The EHST Management option focuses on skills for compliance with Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA) and Department of Transportation (DOT) regulations, whether in private industry, government or the consulting field. Interested students must complete a program application and are encouraged to meet with the Program Manager for program course sequence. Upon successful completion of the EHST program pre-requisite courses, the student will be accepted into the EHST program.

Program Manager – 216-987-2236

Program Admission Requirements:
- Interested students are required to complete a program application and are encouraged to meet with the Program Manager for program course sequence. Upon successful completion of the EHST program pre-requisite courses, the student will be accepted into the EHST program.
- High School Diploma/GED
- Eligibility for ENG-1010 except with departmental permission.
- Eligibility for MATH-1060 except with departmental permission

Other Information:
- Interview with Program Manager strongly recommended.

Program Outcomes: The Associate of Applied Science degree and the Post-Degree Professional Certificate program are designed to prepare students to demonstrate the following program outcomes:

1. Effectively and efficiently manage responsibilities and tasks.
2. Recognize, understand, and assure compliance with relevant regulations.
3. Display effective oral and written communication skills and listening skills.
4. Practice and maintain ethical and professional standards and behavior.

ENVIRONMENTAL, HEALTH AND SAFETY TECHNOLOGY (Continued)

5. Select, prepare, use and maintain equipment appropriately, and apply computer software to information collection, data management, and written communications.

6. Work safely, identify and document relevant environmental conditions using general science principles, and apply principles of quality to daily work tasks.

7. React appropriately to unanticipated or changing conditions.

8. Communicate technical and procedural information to others.

9. Take ownership of job responsibilities.

Suggested Semester Sequence
Note: Select option (a) or (b) before beginning this program.

First Semester		Credits
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
SPCH-1010	Fundamentals of Speech Communication…OR	3
SPCH-101H	Honors Fundamentals of Speech Communication	
MATH-1xxx	1000-level MATH course or higher	3
EHST-1301	Introduction to Environmental Technology	3
		15

Second Semester		Credits
BIO-1060	Environment, Ecology, and Evolution [1]…AND	3
BIO-106L	Environment, Ecology, and Evolution Laboratory … OR	1
BIO-1050	Human Biology [2] … AND	3
BIO-105L	Human Biology Laboratory	1
CHEM-1010	Introduction to Inorganic Chemistry [3] …OR	4
CHEM-101H	Honors Introduction to Inorganic Chemistry	
EHST-1310	Introduction to Environmental Law	4
EHST-1350	Health and Safety in the Workplace	3
		15

Third Semester		Credits
EHST-2220	EH&S Management Systems (a) … OR	2
EHST-1330	Hazardous Waste Operations and Emergency Response (b)	2
EHST-2351	Emergency Planning and Response (a)…AND	2
EHST-2380	Risk Assessment (a) … OR	2
ESCI-1410	Physical Geology (b) … AND	3
ESCI-141L	Laboratory in Physical Geology (b)	1
HLTH-1230	Standard First Aid and Personal Safety	1
EHST-2341	Hazardous Materials Transportation	2
EHST-2361	Environmental Sampling and Analysis	4
Arts & Hum/Soc & Beh Sci (see AAS Degree requirements)		3
		16

Fourth Semester		Credits
BADM-2010	Business Communications (a) … OR	2-3
BADM-201H	Honors Business Communications (a) … OR	
EHST-2xxx	EHST elective course [4] (b)	
ENG-2151	Technical Writing	3
EHST-2390	Solid and Hazardous Waste Management	3
EHST-2940	Field Experience	1 - 2
EHST-2991	Professional Practice C	3
Arts & Hum/Soc & Beh Sci (see AAS Degree requirements)		3
		15 - 17

PROGRAM TOTAL 61 - 63

Program total for Option A = 62-63
Program total for Option B = 61-62

OPTIONS
(a) Option a (Environmental, Health and Safety Management)

		Credits
BADM-2010	Business Communications OR	3
BADM-201H	Honors Business Communications	
EHST 2220	EH&S Management Systems	2
EHST 2351	Emergency Planning and Response	2
EHST 2380	Risk Assessment	2

(b) Option b (Environmental Field Technology)

		Credits
EHST 1330	Hazardous Waste Operations and Emergency Response	2
EHST 2xxx	EHST elective course	2
ESCI 1410	Physical Geology	3
ESCI 141L	Laboratory in Physical Geology	1

[1]BIO 1060/106L recommended for students in Option B.
[2]BIO 1050/105L recommended for students in Option A.
[3]Any higher level CHEM course will be accepted in place of CHEM-1010 requirement except CHEM-1800-1819/2800-2819 & 1820/2820.
[4]EHST elective course must have written departmental approval before registering for course.

C = Capstone course.

ENVIRONMENTAL, HEALTH AND SAFETY TECHNOLOGY

Post-Degree Professional Certificate

  The Environmental, Health and Safety Technology Certificate Degree Program is a course of study designed to provide students with a well-rounded education in EH&S regulatory compliance and EH&S management. It is intended for those currently working in the EH&S field seeking to enhance and broaden their knowledge, or those working in other fields desiring coursework to help change or modify their careers. Students must already possess a college degree (associate or higher), although the degree may be in any subject area. Students entering the program must complete a program application and are encouraged to consult with the Program Manager to develop a course completion plan compatible with the student's professional goals and program completion timeframe. Degree: Students may apply course credits toward the Environmental, Health and Safety Technology Associate Degree.

Program Manager – 216-987-2236

Program Admissions Requirements:

- Student applicant must complete a program application and is strongly encouraged to meet with the EHST Program Manager before enrolling in any EHST course.
- Applicant must have already completed an associate degree or higher from an accredited college or university. The degree may be in any subject area.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Effectively and efficiently manage responsibilities and tasks.

2. Recognize, understand, and assure compliance with relevant regulations.

3. Display effective oral and written communication skills and listening skills.

4. Practice and maintain ethical and professional standards and behavior.

5. Apply computer software to information collection, data management, and written communications.

6. Work safely, identify and document relevant environmental conditions using general science principles, and apply principles of quality to daily work tasks.

7. React appropriately to unanticipated or changing conditions.

8. Communicate technical and procedural information to others.

9. Take ownership of job responsibilities.

Suggested Semester Sequence

First Semester		Credits
EHST-1301	Introduction to Environmental Technology	3
EHST-1310	Introduction to Environmental Law	4
EHST-1350	Health and Safety in the Workplace	3
ENG-1010	College Composition I …OR	3
ENG-101H	Honors College Composition I	
MATH-1xxx	1000-level MATH course or higher	3
		16

Second Semester		Credits
EHST-2220	EH&S Management Systems	2
EHST-2341	Hazardous Materials Transportation	2
EHST-2351	Emergency Planning and Response	2
EHST-2380	Risk Assessment	2
EHST-2390	Solid and Hazardous Waste Management	3
EHST-2991	Professional Practice	3
		14
	PROGRAM TOTAL	30

FIRE TECHNOLOGY

Associate of Applied Science degree in Fire Technology

  This curriculum offers a balanced and broad education to students who plan to enter fire service as a career. It also helps active firefighters upgrade themselves for advancement within the service. Included are such specialized areas of instruction as fire prevention, investigation, protection systems and municipal public relations.

Program Admissions Requirements:

- Successful completion of Fire Academy and appropriate state certification.

Other Information:
- Students who successfully complete the Tri-C Fire Training Academy will receive credit for the following courses towards this program: EMT-1310, EMT-1320, EMT-1330, FIRE-1100, FIRE-1200, FIRE-1500, and FIRE-2321.
- Students who have State Certification in Firefighting can apply for comparable credit. Contact Mike Boyko at 216-987-5037.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Recognize and apply principles and practices of leadership and management in all aspects of departmental operations.

2. Exhibit professional conduct that follows department, city, state and federal regulations, and promote sound physical, psychological, spiritual health and safety at all times.

3. Communicate/educate verbally and in writing using appropriate technology with diverse colleagues, public administration and the community to provide direction and information about an event that meets the goals/objectives of the organization.

4. Work with coworkers, internal and external agencies, and the community to resolve conflicts that achieve a common goal while respecting diverse beliefs and opinions.

FIRE TECHNOLOGY (Continued)

5. Apply knowledge of patient assessment and treatment to manage response personnel and be able to assess and treat medical emergencies within scope of practice.

6. Respond to an event, evaluate the situation, and implement appropriate strategies and tactics to save lives, protect property and the environment, and mitigate the hazards in a safe and efficient manner.

Suggested Semester Sequence

First Semester		Credits
EMT-1310	Cardiopulmonary Resuscitation[1]	1
EMT-1320	Heavy Rescue[1]	2
EMT-1330	Defensive Driving - EMT [1]	1
FIRE-1100	Principles of Emergency Services [1]	3
FIRE-1200	Principles of Fire and Emergency Services Safety and Survival[1]	2
FIRE-1500	Fire Behavior and Combustion[1]	2
FIRE-2321	Fire Protection Systems[1]	2
		13

Second Semester		Credits
CHEM-1010	Introduction to Inorganic Chemistry … OR	4
CHEM-101H	Honors Introduction to Inorganic Chemistry	
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
FIRE-1600	Fire Prevention	3
FIRE-2351	Building Construction for Fire Protection	3
FIRE-2401	Fire Protection Hydraulics and Water Supply	3
MATH-1270	Intermediate Algebra or higher[2]	4
		20

Third Semester		Credits
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II	
FIRE-1300	Fire Tactics and Strategy	3
FIRE-1400	Chemistry of Hazardous Materials	2
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
POL-1010	American National Government … OR	3
POL-101H	Honors American National Government	
		14

Fourth Semester		Credits
FIRE-2600	Fire Investigation Methods	3
FIRE-2720	Fire Service Training and Public Relations	2
FIRE-2730	Managing Fire Services	3
FIRE-2990	Fire Technology Professional Study [C]	1
POL-1020	State and Local Government	3
SPCH-1000	Fundamentals of Interpersonal Communication	3
		15
	PROGRAM TOTAL	62

[1]Students will receive credit for these courses upon successful completion of the Fire Training Academy.
[2]MATH-1800-1820 may not be used to meet this requirement.
[C] = Capstone course.

HEALTH INFORMATION MANAGEMENT TECHNOLOGY

Associate of Applied Science degree in Health Information Management Technology

The Health Information Management Technology (HIM) program prepares graduates who can identify and use a variety of health information resources and technologies to accomplish the objectives of diverse practice environments. In general, these individuals may perform tasks related to the use, analysis, validation, presentation, abstracting, coding, storage, security, retrieval, quality measurement and control of health care data. Their task responsibility may also include supervision of personnel. The program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM), a division of the American Health Information Management Association (AHIMA). The goal of the Health Information Management Technology Program is to provide an educational experience within the framework of professional standards. Graduates of the program may be eligible to take the national certification examination to become a Registered Health Information Technician (RHIT). Upon passing the examination, an individual is permitted to use the credential RHIT behind his/her last name. Earning a credential validates your competence as an HIM professional to employers and the public.

Program Manager - 216-987-4456

Program Admission Requirements: Students must request an application packet from the health Careers Enrollment Center 216-987-4247 for comprehensive admissions and program information:

- High School Diploma/GED
- Complete ENG-1010 or ENG-101H with "B" or higher.
- Eligibility for MATH-1060
- Complete the following:
  BIO-2331 (or 2330) with "B" grade or higher
  IT-1010 (or CS-1020) with "B" grade or higher
  MA-1020 with "B" grade or higher
  HTEC-1120 (or PHIL-1000) with "B" grade or higher
- GPA required: 3.00 admission requirements. 2.50 overall.
- Biology courses are acceptable for HIM program admittance for 5 years. HIM courses expire after one year of absence from the program and will need to be repeated if student requests readmittance to the degree program.
- Coding courses expire after one year.
- Students who withdraw from or leave the Health Information Management Technology Program for any amount of time will have to reapply for admission and will be required to repeat all HIM courses previously taken.
- Non-native English speaking applicants must demonstrate competence in verbal, written and oral communication skills. Applicants whose native language is not English and test into the ESL series must take the TOEFL exam at www.toefl.org and score at least a 21 in Reading and Listening, a 23 in Writing, and a 25 in Speaking.

Other Information:
- 30 students accepted per year.
- Admissions requirements may only be repeated once to improve a grade.
- Upon acceptance into program and prior to clinical practice, student must submit evidence of good health.
- Criminal background check required (see page 73).

HEALTH INFORMATION MANAGEMENT TECHNOLOGY (Continued)

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Utilize oral and written skills to effectively communicate and interact with health care professionals, colleagues, administration and customers to enhance satisfaction.

2. Develop effective interpersonal skills to conduct yourself professionally among clients, colleagues, and other health care professionals.

3. Conduct yourself ethically and professionally according to the AHIMA code of ethics and standards of practice.

4. Use a variety of techniques to problem solve and arrive at best outcome.

5. Apply regulatory and accreditation standards to identify and support documentation compliance.

6. Apply hospital policies, federal regulations and/ or state statutes in the release and management of protected health information (PHI).

7. Identify areas of quality assurance/Continuous Quality Improvement (CQI) that relate to risk management, utilization review and documentation compliance.

8. Apply skills to find, build, research, manage and report both electronic and paper data.

9. Employ auditing skills and methodologies to insure compliance, accuracy, completeness, regulations, policies and procedures, and protocols in the health care delivery system.

10. Utilize knowledge and skills of anatomy & physiology, medical terminology, pharmacology, pathophysiology, code sets, reimbursement methodologies and regulations to analyze clinical documentation to accurately and thoroughly assign respective code sets for entity's database and third party reimbursement.

11. Apply skills to find, build, restart and manage the system.

12. Apply management skills for the daily operations of HIM department related entity.

Suggested Semester Sequence

Program Admissions Requirements Semester		Credits
BIO-2331	Anatomy and Physiology I	4
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	3
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	3
MA-1020	Medical Terminology I	3
HTEC-1120	Critical Thinking in Healthcare [1]	1
		14

First Semester		Credits
BIO-2341	Anatomy and Physiology II	4
HIM-1301	Introduction to Health Information Management	3
HIM-1311	Legal Aspects of Health Care	3
HIM-1401	Systems in Healthcare Delivery	2
MATH-1xxx	1000-level MATH course or higher	3
		15

Second Semester		Credits
BIO-2600	Pathophysiology	3
HIM-1411	Healthcare Statistical Applications & Research	2
HIM-1423	Health Data Documentation, Sources and Classification Systems	3
HIM-1431	Healthcare Informatics and Information Management	3
HTEC-1610	Introduction to Pharmacology	2
PSY-1010	General Psychology … OR	3
PSY-101H	Honors General Psychology	
		16

Third Semester		Credits
HIM-2130	Coding with CPT (Current Procedural Terminology)	2
HIM-2160	Coding with ICD-10-CM	2
HIM-2200	Project Management for the Health Information Management Professional	2
HIM-2312	Quality Assessment and Improvement	3
HIM-2430	Medical Reimbursement Methodologies	2
HIM-2851	Practicum I [C]	3
		14

Fourth Semester		Credits
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II	
HIM-2260	Coding with ICD-10-PCS	2
HIM-2401	Intermediate Coding	2
HIM-2410	Management Practices in Health Information	2
HIM-2440	Fundamentals of Healthcare Workflow and Process Analysis [C]	2
SPCH-1000	Fundamentals of Interpersonal Communication … OR	3
SPCH-1010	Fundamentals of Speech Communication…OR	
SPCH-101H	Honors Fundamentals of Speech Communication	
		14

PROGRAM TOTAL	73

[1]PHIL-1000 may be taken in place of HTEC-1120.

[C] = Capstone course.

HEALTH UNIT COORDINATOR

Short-Term Certificate

   A Health Unit Coordinator (HUC) is an essential member of a health care team with nonclinical responsibilities who manages all nonclinical tasks on hospital nursing units. Responsibilities include coordinating the activities of the nursing staff, doctors, hospital diagnostic departments, patients, and the visitors to the nursing unit. Health Unit Coordinators are skilled in transcribing physician orders for patient treatment, preparing patient charts, maintaining statistical reports, and much more. It is one of the more key positions on the nursing unit. Health Unit Coordinators may also be employed in emergency departments, doctor's offices, clinics, ambulatory surgery centers and long-term care facilities to assist the nursing staff with clerical duties related to patients health records' and coordination of treatment.

Program Manager - 216-987-4456

Financial Assistance funds cannot be applied towards this program.

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED.
- Completion of ENG-1010 English Composition I.
- Completion of MA-1020 Medical Terminology I.
- Completion of IT-1010 Introduction to Microcomputer Applications.
- Time limit on admissions requirements prior to application is two years.
- GPA required: 2.0.
- Number of students accepted per year is based on openings available in the course cap as offered for Health Unit Coordinator (HIM-1060).
- MA-1020 Medical Terminology I and MA-2010 Medical Terminology II must be completed within three years of program completion if not using Medical Terminology in current work environment.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Utilize oral and written skills to effectively communicate and interact with health care professionals, colleagues, administration and customers to enhance satisfaction.

2. Develop effective interpersonal skills to conduct yourself professionally among clients, colleagues, and other health care professionals.

3. Conduct yourself ethically and professionally according to the National Association of Health Unit Coordinators (NAHUC) code of ethics and standards of practice.

4. Use a variety of techniques to problem solve and arrive at best outcome.

5. Follow regulatory, legal and accreditation standards when performing day to day activities.

6. Find, file/enter and maintain the integrity of patient records both paper and electronic format.

7. Use word processing, spreadsheets, email and health care software to coordinate patient care services.

8. Coordinate the daily operation of the Health Care Unit.

Suggested Semester Sequence

Summer Session		Credits
MA-1020	Medical Terminology I	3
		3

First Semester		Credits
ENG-1010	College Composition I ... OR	3
ENG-101H	Honors College Composition I	
HIM-1060	Health Unit Coordinator	3
IT-1010	Introduction to Microcomputer Applications Applications ... OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
MA-2010	Medical Terminology II	2
		11
	PROGRAM TOTAL	14

MEDICAL BILLING SPECIALIST
Short-Term Certificate

The Medical Billing Specialist Certificate is a short-term program established to prepare students for employment in physicians' offices, medical insurance companies, and outpatient billing services. Medical Billing Specialists provide patient billing services for physicians, dentists, physical therapists, and other health care providers. They are knowledgeable in ICD, CPT-4 and HCPCS coding, medical terminology; processing insurance claims, appeals and denials; fraud and abuse; HIPAA and OIG Compliance; information and web technology; reimbursement practices, and much more.

Degree: Students may apply credits toward Health Information Management degree or the Medical Assisting degree program.

Program Manager - 216-987-4456

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Eligibility for ENG-1010.
- Eligibility for MATH-1060.

Other Information:
- Number accepted per year is based on courses offered and number of openings available in the course each semester.
- 2.0 GPA required.
- Students must pass all courses with a grade of "C" or higher in all required courses.
- MA-1020 and MA-2010 must be completed within two years of program completion if not using Medical Terminology in current work environment.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Utilize oral and written skills to effectively communicate and interact with health care professionals, colleagues, administration and customers to enhance satisfaction.

2. Develop effective interpersonal skills to conduct yourself professionally among clients, colleagues, and other health care professionals.

3. Conduct yourself ethically and professionally according to the AHIMA code of ethics and standards of practice.

4. Use a variety of techniques to problem solve and arrive at best outcome.

5. Apply regulatory and accreditation standards to identify and support documentation compliance.

6. Apply hospital policies, federal regulations and/ or state statutes in the release and management of protected health information (PHI).

7. Ensure document compliance for services being billed.

8. Apply skills to find, build, research, manage and report both electronic and paper data.

9. Employ auditing skills and methodologies to insure compliance, accuracy, completeness, regulations, policies and procedures, and protocols in the healthcare delivery system.

10. Utilize knowledge and skills of medical terminology, codesets, reimbursement methodologies and regulations to accurately and thoroughly assign respective code sets.

Suggested Semester Sequence

First Semester		Credits
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
MA-1020	Medical Terminology I	3
MATH-1xxx	1000-level MATH course or higher	3
		12

Second Semester		Credits
HIM-1112	Physician Office Coding	4
HIM-1121	Medical Billing Practices	2
HIM-1311	Legal Aspects of Health Care	3
MA-2010	Medical Terminology II	2
		11

	PROGRAM TOTAL	23

Upon successful completion with a grade of C or better in all program courses, the student will earn a Certificate in Medical Billing Specialist.

HOSPITALITY MANAGEMENT (Culinary Art)

Associate of Applied Business degree in Hospitality Management with a concentration in Culinary Art

The Culinary Art curriculum follows the guidelines of the American Culinary Federation and is accredited by the American Culinary Federation Accreditation Commission. The culinary concentration has three major components: hands-on food preparation, kitchen management and supervision, and academic. The culinary concentration emphasizes hands-on food preparation, including advanced techniques in garde-manger, baking, contemporary and classical cuisine. The kitchen management and supervision component emphasizes menu planning, purchasing, cost control, human resource training and supervision, and facilities management. The academic component helps prepare the student for critical thinking, decision making, customer service, communication skills and cultural awareness. This program provides all the basics for the beginner and all of the advanced management skills for those who have worked in the culinary field at line-level positions. Practical industry-related experiences are included.

Program Manager – 216-987-4081

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Successfully complete ServSafe Certification Exam.

2. Identify and apply basic culinary terminology, knife skills, and cooking techniques while multitasking, problem solving, and managing stress levels within a diverse hospitality environment.

3. Communicate verbally to colleagues, staff, and management.

4. Develop menus for healthy living utilizing sustainable and local agriculture.

5. Apply and demonstrate culinary knowledge and skills with consistency using established standards within the industry and facility.

6. Use culinary math and measurements to convert and modify basic recipes.

7. Use a computer to prepare correspondence, menus, daily logs, order sheets, and prep lists.

8. Develop schedules and manage time, inventory, and costs.

9. Apply management principles and practices and group dynamics while delegating, cross training, and motivating employees.

10. Use advanced knowledge and skills in product receiving, utilization, fabrication, and presentation while maintaining quality control.

11. Demonstrate creativity, flexibility, physical stamina, and passion for lifelong learning.

Suggested Semester Sequence

First Semester		Credits
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
HOSP-1010	Introduction to the Hospitality Industry	2
HOSP-1020	Sanitation and Safety	2
HOSP-1031	Fundamentals of Culinary Arts	3
HOSP-1040	Customer Service	2
HOSP-1552	Introduction to Baking & Pastries	3
		15

Second Semester		Credits
DIET-1200	Basic Nutrition	3
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II	
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	3
HOSP-1451	Contemporary Cuisine	4
HOSP-1650	Dining Room Operations	2
HOSP-2700	Hospitality Purchasing	2
		17

Summer Semester		Credits
HOSP-1940	Culinary Arts/Professional Baking Field Experience	1
MATH-1xxx	1000-level MATH course or higher	3
		4

Third Semester		Credits
HOSP-1940	Culinary Arts/Professional Baking Field Experience	1
HOSP-2300	Facilities Design and Maintenance	2
HOSP-2340	Menu Planning for Healthy Living	3
HOSP-2350	Restaurant Operations	3
HOSP-2400	Hospitality Management and Supervision	3
HOSP-2500	Hospitality Cost Control	3
HOSP-2560	Garde Manger	3
		18

Fourth Semester		Credits
ACCT-1020	Applied Accounting	3
HOSP-2651	Banquet Management & Production [C]	4
HOSP-2992	Culinary Evaluation & American Regional Cuisine [C]	2
HOSP-xxxx	HOSP elective course	2 - 3
Arts & Hum/Soc & Beh Sci (see AAS Degree requirements)		3
		14 - 15
	PROGRAM TOTAL	68 - 69

[C] = Capstone course.

ELECTIVES

Electives		Credits
Select from the following courses to fulfill hospitality elective requirement:		
HOSP 1710	Doing Business as a Personal Chef	3
HOSP 1730	International Cuisine	3
HOSP 2550	Baking Production and Sales II	3
HOSP 2750	Culinary Competition	2

PERSONAL CHEF
Short-Term Certificate

The Personal Chef Short-Term Certificate program provides the knowledge and skills needed to succeed in the personal chef industry. Career opportunities would be to own and operate your own personal chef business.

Degree: Credits may apply towards Associate of Applied Business degree in Hospitality Management with a concentration in Culinary Arts.

Financial Assistance funds cannot be applied towards this program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Effectively communicates verbally and in writing with customers and other professionals.

2. Plan, prepare and properly store foods using personal chef style recipes, tools, equipment and safe and sanitary procedures that meet the customer needs/requirements.

3. Plan, determine and develop marketing, legal, financial, insurance and sales strategies to establish and operate an effective Personal Chef business.

4. Successfully complete ServSafe Certification Exam.

Suggested Semester Sequence

First Semester		Credits
ENG-1010	College Composition I…OR	3
ENG-101H	Honors College Composition I	
HOSP-1020	Sanitation and Safety	2
HOSP-1031	Fundamentals of Culinary Arts	3
HOSP-1710	Doing Business as a Personal Chef	3
		11
	PROGRAM TOTAL	11

PROFESSIONAL BAKING
Certificate of Proficiency

This program provides all of the basic, advanced skills and practice needed to start on a career as a professional pastry Culinarian. It includes all of the educational requirements for certification through the executive pastry chef level of certification by the American Culinary Federation. Students complete a field experience that provides the work experience needed to advance and the work experience needed for certificates.

Degree: Students (especially those seeking executive pastry chef status) may apply credits toward Hospitality Management Degree with a Concentration in Culinary Art.

Program Manager – 216-987-4081

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Demonstrate appropriate use of interpersonal communication skills, cooperation, teambuilding, and conflict management in daily foodservice operations.

2. Develop and apply principles of self and team awareness, time awareness, and personal responsibility.

3. Demonstrate proficient baking skills in quality production of breads, cakes, cookies, pies, sauces, custards, and ice cream while applying sanitation and safety principles, and correctly using appropriate equipment.

4. Demonstrate knowledge and principles of ingredients, inventory, organization, receiving, measuring, and recipe manipulation.

5. Plan, execute, control, and consistently produce bakery and pastry products for sale in a diverse foodservice environment.

6. Apply critical thinking skills to manage people, efficiently produce product, and control quality of production in a wide range of foodservice outlets.

7. Develop and apply professional business and human interactive skills in the production and sale of baked goods.

Suggested Semester Sequence

First Semester		Credits
ENG-1010	College Composition I …OR	3
ENG-101H	Honors College Composition I	
HOSP-1010	Introduction to the Hospitality Industry	2
HOSP-1020	Sanitation and Safety	2
HOSP-1031	Fundamentals of Culinary Arts	3
HOSP-1040	Customer Service	2
HOSP-1552	Introduction to Baking & Pastries	3
		15

Second Semester		Credits
HOSP-1451	Contemporary Cuisine	4
HOSP-2400	Hospitality Management and Supervision	3
HOSP-2550	Baking Production and Sales II	3
HOSP-2700	Hospitality Purchasing	2
		12

Summer Session		Credits
HOSP-1940	Culinary Arts/Professional Baking Field Experience	2
MATH-1xxx	1000-level MATH course or higher	3
		5
	PROGRAM TOTAL	32

PROFESSIONAL CULINARIAN/COOK
Certificate of Proficiency

This program provides all the basic, advanced skills and practice needed to start a career as professional cook/chef. It includes all of the educational requirements for certification through the executive chef level of certification by the American Culinary Federation.   Students complete a field experience that provides the work experience needed to advance and the work experience needed for certification.

Degree: Credits may apply toward Hospitality Management Degree with a Concentration in Culinary Art.

Program Manager – 216-987-4081

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1.   Successfully complete ServSafe Certification Exam.

2.   Identify and apply basic culinary terminology, knife skills, and cooking techniques while multitasking, problem solving, and managing stress levels within a diverse hospitality environment.

3.   Communicate appropriately to colleagues, staff, and management.

4.   Convert and/or modify basic recipes using culinary math and measurements.

5.   Apply and demonstrate culinary knowledge and skills with consistency using established standards within the industry and facility.

6.   Use a computer to prepare correspondence, menus, daily logs, order sheets, and prep lists.

Suggested Semester Sequence

First Semester		Credits
ENG-1010	College Composition I …OR	3
ENG-101H	Honors College Composition I	
HOSP-1010	Introduction to the Hospitality Industry	2
HOSP-1020	Sanitation and Safety	2
HOSP-1031	Fundamentals of Culinary Arts	3
HOSP-1552	Introduction to Baking & Pastries	3
		13

Second Semester		Credits
HOSP-1040	Customer Service	2
HOSP-1451	Contemporary Cuisine	4
HOSP-2400	Hospitality Management and Supervision	3
HOSP-2500	Hospitality Cost Control	3
HOSP-2700	Hospitality Purchasing	2
		14

Summer Session		Credits
HOSP-1940	Culinary Arts/Professional Baking Field Experience	2
MATH-1xxx	1000-level MATH course or higher	3
		5
	PROGRAM TOTAL	32

HOSPITALITY MANAGEMENT (Lodging-Tourism Management)
Associate of Applied Business degree in Hospitality Management with a concentration in Lodging-Tourism Management

The lodging-tourism management concentration prepares students for entry-level supervision in front office, sales and convention management. This leads to increasingly responsible management positions in hotels, motels and clubs. Included is a minimum component of foodservice and observations of front-office and sales/marketing and convention planning functions. This program is accredited by the Commission on Accreditation of Hospitality Management (CAHM) Programs. Practical industry related experiences are included.

Program Manager – 216-987-4081

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1.   Read and speak standard English and use basic math skills appropriate to a business environment.

2.   Display a professional image, positive attitude, strong work ethic, and recognize your role in the success of the organization where you are employed.

3.   Acquire and correctly use general industry information, technical skills, and certifications for employment in the hospitality industry.

4.   Use organization and flexibility to complete tasks, make decisions, and problem solve in a timely manner with attention to detail in an unpredictable environment.

5.   Listen and effectively communicate in a positive, professional, and ethical manner with customers and co-workers of diverse backgrounds to create an exemplary hospitality experience based on respect and joy.

6.   Read and accurately interpret standard indicators of the organization's financial health.

7.   Use appropriate technology for written communication, information gathering, scheduling, data analysis, forecasting, report generation, and planning to facilitate smooth operation of a hospitality/tourism organization.

8.   Take responsibility for actively pursuing personal and professional growth.

9.   Demonstrate leadership and supervision skills requiring personal interaction, motivation, decision-making, ethical and professional behavior, and an appreciation of diversity to support the organization and its goals.

10. Utilize research and problem-solving techniques to employ "out of the box" critical thinking skills in a variety of hospitality situations.

HOSPITALITY MANAGEMENT (Lodging-Tourism Management) (Continued)

Suggested Semester Sequence

First Semester		Credits
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
HOSP-1010	Introduction to the Hospitality Industry	2
HOSP-1020	Sanitation and Safety	2
HOSP-1031	Fundamentals of Culinary Arts	3
HOSP-1040	Customer Service	2
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
		15

Second Semester		Credits
ACCT-1020	Applied Accounting	3
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II	
HOSP-1480	Housekeeping Operations	2
HOSP-1580	Front Office Operations	2
Arts & Hum (see AAB/AAS degree requirements)		3
		13

Summer Semester		Credits
HOSP-1960	Lodging/Tourism Management Field Experience	1
MATH-1xxx	1000-level MATH course or higher	3
		4

Third Semester		Credits
HOSP-1380	Dimensions of Tourism	3
HOSP-2300	Facilities Design and Maintenance	2
HOSP-2400	Hospitality Management and Supervision	3
HOSP-2480	Hospitality Law	3
HOSP-2700	Hospitality Purchasing	2
		13

Fourth Semester		Credits
HOSP-2380	Hospitality Marketing and Sales	3
HOSP-2500	Hospitality Cost Control	3
HOSP-2580	Convention Management and Meeting Planning	2
HOSP-2861	Lodging and Tourism Management Experience Practicum [C]	4
Soc& Beh Sci (See AAB/AAS degree requirements)		3
		15

	PROGRAM TOTAL	60

[C] = Capstone course.

EVENT PLANNING

Short-Term Certificate

The Event Planning Certificate program is intended for students interested in the theories and practical aspects of event and meeting management, including research, design, planning, coordination, execution, and evaluation of events and meetings of various types and sizes. Graduates will fill roles of: catering assistants, meeting planners, event assistants, event planners, promotions managers, and small business owners.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Identify key players (i.e. vendors, clients, hotels, caterers, sponsors, etc.) build and sustain appropriate relations to work effectively to plan and execute events.
2. Demonstrate professional and ethical conduct and work practices to comply with appropriate industry standards and applicable laws.
3. Communicate clearly and effectively verbally and in writing using appropriate media and cultural sensitivity with prospects, clients, colleagues, sponsors, vendors, media and other stakeholders.
4. Determine and use appropriate information sources and technology to research, plan, communicate, market, execute and evaluate an event.
5. Plan, coordinate, and execute within time and budget parameters, the event theme, program, logistics, resources, and marketing, while minimizing risk and meeting or exceeding client expectations.

Suggested Semester Sequence

First Semester		Credits
ENG-1010	College Composition I …OR	3
ENG-101H	Honors College Composition I	
HOSP-1010	Introduction to the Hospitality Industry	2
HOSP-1040	Customer Service	2
HOSP-1180	Event Planning Essentials	2
IT-1010	Intro to Microcomputer Applications …OR	3
IT-101H	Honors Intro to Microcomputer Applications	
XXXX	Elective Requirements[1]	2 - 4
		14 - 16

Second Semester		Credits
HOSP-2180	Event Planning Workshop	2
HOSP-2380	Hospitality Marketing and Sales	3
HOSP-2400	Hospitality Management and Supervision	3
SPCH-1000	Fundamentals of Interpersonal Communication	3
XXXX	Elective Requirements[1]	2
		13

	PROGRAM TOTAL	27 - 29

[1]Must complete two courses to meet elective requirements.

Electives		Credits

Students must select two courses (4–6) credits of electives from the following courses.

ACCT 1020	Applied Accounting	3
BADM-1300	Small Business Management	4
HOSP 1020	Sanitation and Safety	2
HOSP 2340	Menu Planning for Healthy Living	3
HOSP 2480	Hospitality Law	3
HOSP 2580	Convention Management and Meeting Planning	2
IT 1030	Internet Fundamentals	2
SPCH 1010	Fundamentals of Speech Communication	3

LODGING ROOMS DIVISION

Certificate of Proficiency

This program focuses on training the student for Rooms Division positions in the lodging industry. Students will have on-site training at area lodging facilities and will learn to use front desk and other related software. Upon successfully completing the courses, students will be awarded a Rooms Division Certification of Specialization from the American Hotel and Motel Association. Students complete a practicum that provides the work experience needed to advance and the work experience needed for certification.

Degree: Students may apply credits toward the Hospitality Management with a concentration in Lodging-Tourism Management degree program.

Program Manager – 216-987-4082

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Read and speak standard English and use basic math skills appropriate to a business environment.

2. Display a professional image, positive attitude, strong work ethic, and recognize your role in the success of the organization where you are employed.

3. Acquire and correctly use general industry information, technical skills, and certifications for employment in the hospitality industry.

4. Use organization and flexibility to complete tasks, make decisions, and problem solve in a timely manner with attention to detail in an unpredictable environment.

5. Listen and effectively communicate in a positive, professional, and ethical manner with customers and co-workers of diverse backgrounds to create an exemplary hospitality experience based on respect and joy.

6. Read and accurately interpret standard indicators of the organization's financial health.

7. Use appropriate technology for written communication, information gathering, scheduling, data analysis, forecasting, report generation, and planning to facilitate smooth operation of a hospitality/tourism organization.

Suggested Semester Sequence

First Semester		Credits
ENG-1010	College Composition I …OR	3
ENG-101H	Honors College Composition I	
HOSP-1010	Introduction to the Hospitality Industry	2
HOSP-1020	Sanitation and Safety	2
HOSP-1040	Customer Service	2
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
MATH-1xxx	1000-level MATH course or higher	3
		15

Second Semester		Credits
ACCT-1020	Applied Accounting	3
HOSP-1480	Housekeeping Operations	2
HOSP-1580	Front Office Operations	2
HOSP-1960	Lodging/Tourism Management Field Experience	1
HOSP-2400	Hospitality Management and Supervision	3
HOSP-2480	Hospitality Law	3
HOSP-2380	Hospitality Marketing and Sales	3
		17
	PROGRAM TOTAL	32

HOSPITALITY MANAGEMENT (Restaurant/Food Service Management)

Associate of Applied Business degree with a concentration in Restaurant/Food Service Management

This program is accredited by both the Commission on Accreditation of Hospitality Management Programs and the Accrediting Commission of the American Culinary Federation, insuring an industry-approved quality curriculum. Students are prepared for entry-level front-and back-of-the-house supervisory positions in both restaurant and institutional food service and beverage establishments. Students are also prepared for future positions as kitchen managers, dining room managers, banquet managers, purchasing agents, food and beverage controllers and restaurant/food service managers. Curriculum includes skill training, business and management techniques, critical thinking, decision making, customer service, communication and cultural awareness skills. Practical industry related experiences are included.

Program Manager – 216-987-4081

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Obtain an entry-level skill position in the food service industry.

2. Demonstrate customer service skills and professional and ethical conduct according to industry standards.

3. Apply proper sanitation principles to meet industry standards and government regulations.

4. Listen, speak, and communicate with team members to achieve customer satisfaction and operational success.

5. Participate in day-to-day operation of a food and beverage establishment.

6. Apply time management skills and principles of quality to daily work tasks.

7. Identify and explain the importance of diversity in the workplace.

8. Utilize the principles of purchasing and inventory control.

9. Apply standard HR principles in regards to recruiting, retaining, and developing staff.

10. Develop team ethics and goal achievement in a relevant work environment.

11. Practice and refine decision-making skills.

12. Manage a day-to-day dining room operation using standard applied business practices such as forecasting, cost control, and marketing and promotions.

13. Demonstrate an understanding of basic culinary competencies.

Suggested Semester Sequence

First Semester		Credits
HOSP-1010	Introduction to the Hospitality Industry	2
HOSP-1020	Sanitation and Safety	2
HOSP-1031	Fundamentals of Culinary Arts	3
HOSP-1040	Customer Service	2
HOSP-1360	Fundamentals of Restaurant/Foodservice Management	3
HOSP-1552	Introduction to Baking & Pastries	3
		15

Second Semester		Credits
ACCT-1020	Applied Accounting	3
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
HOSP-1451	Contemporary Cuisine	4
HOSP-1650	Dining Room Operations	2
HOSP-1680	Beverage Management	2
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
		17

Summer Semester		Credits
HOSP-1950	Restaurant/Food Service Management Field Experience	1
MATH-1xxx	1000-level MATH course or higher	3
		4

Third Semester		Credits
HOSP-2350	Restaurant Operations	3
HOSP-2360	Restaurant Marketing	2
HOSP-2400	Hospitality Management and Supervision	3
HOSP-2700	Hospitality Purchasing	2
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II	
		13

Fourth Semester		Credits
HOSP-2370	Restaurant/Foodservice Entrepreneurship [C]	3
HOSP-2500	Hospitality Cost Control	3
HOSP-2871	Food and Beverage Management Experience [C]	2
Arts & Hum (see AAB/AAS degree requirements)		3
Soc & Beh Sci (See AAB/AAS degree requirements)		3
		14

	PROGRAM TOTAL	63

[C] = Capstone course.

FOOD AND BEVERAGE OPERATIONS
Certificate of Proficiency

This program provides all the basic, advanced skills and practice needed to start a career as a professional Food and Beverage Manager. Students complete a practicum that provides the work experience needed to advance and the work experience needed for certification.

Degree: Students may apply credits toward Hospitality Management with a concentration in Restaurant/Foodservice Management Degree program.

Program Manager – 216-987-4081

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Obtain an entry-level skill position in the food service industry.

2. Demonstrate customer service skills and professional and ethical conduct according to industry standards.

3. Apply proper sanitation principles to meet industry standards and government regulations.

4. Listen, speak, and communicate with team members to achieve customer satisfaction and operational success.

5. Participate in day-to-day operation of a food and beverage establishment.

6. Apply time management skills and principles of quality to daily work tasks.

7. Identify and explain the importance of diversity in the workplace.

8. Utilize the principles of purchasing and inventory control.

9. Apply standard HR principles in regards to recruiting, retaining, and developing staff.

Suggested Semester Sequence

First Semester		Credits
HOSP-1010	Introduction to the Hospitality Industry	2
HOSP-1020	Sanitation and Safety	2
HOSP-1031	Fundamentals of Culinary Arts	3
HOSP-1040	Customer Service	2
HOSP-1360	Fundamentals of Restaurant/Foodservice Management	3
MATH-1xxx	1000-level MATH course or higher	3
		15

Second Semester		Credits
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	3
HOSP-1650	Dining Room Operations	2
HOSP-1680	Beverage Management	2
HOSP-1950	Restaurant/Food Service Management Field Experience	1
HOSP-2360	Restaurant Marketing	2
HOSP-2370	Restaurant/Foodservice Entrepreneurship	3
HOSP-2400	Hospitality Management and Supervision	3
		16
	PROGRAM TOTAL	31

HUMAN SERVICES
Associate of Applied Science degree in Human Services

Alcohol/Chemical Dependency Option. The Alcohol/Chemical Dependency Option of the Human Services program provides students the competencies that enable them to work with people who are chemically dependent. Career opportunities for graduates include employment in a variety of settings ranging from in-patient programs to community-based outpatient and prevention programs. Students in the program can qualify to be a Chemical Dependency Counselor Assistant after taking three credits in Chemical dependency course work and completing 40 hours of volunteer work under a licensed supervisor. Graduates of the program receive a significant number of board recognized hours toward the Licensed Chemical Dependency Counselor II (LCDCII) requirements established by the Ohio Department of Alcohol and Drug Addiction Services, and are prepared for licensure exams for LCDC II administered by the Chemical Dependency Professionals Board.

Generalist Option. The Generalist Option of the Human Services program provides students with the competencies which enable them to work with a variety of people with various needs. Career opportunities for graduates are in community-based programs which emphasize practical approaches to problem solving. All graduates of the Human Services program are eligible to receive certification as a Social Work Assistant from the Ohio Counselor, Social Worker, Marriage and Family Therapy Board.

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

*   High School Diploma/GED highly recommended, but not required.
*   Eligibility for ENG-1010.
*   Complete the following in sequence: HS-1300 and HS-1850 ("C" grade or higher in each).
*   Requirements listed are the same for both Generalist and Alcohol/Chemical Dependency options.

Other Information:
*   Human Service students must sign and abide by the Human Service Code of Conduct during the first week of enrollment in HS-1300.
*   Criminal Background check (BCI) required (see page 73); must be completed at least three months prior to enrollment in HS-1850.
*   Students may only enroll in the following courses prior to completing BCI: HS-1100, HS-1110, HS-2530.
*   Students must maintain a 2.00 GPA in all HS courses.
*   Schedules must be approved by HS faculty advisor prior to registration for second semester and beyond.
*   Non-majors may enroll in HS courses for which they have satisfied the prerequisite.
*   Students re-entering after one year absence from the Human Service Program will be required to complete another BCI.
*   Contact program coordinator for additional information.
*   Students will be charged a fee for Health Careers Liability Insurance when enrolling in HS-1850.

HUMAN SERVICES (Continued)

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Conduct oneself in a professional manner and apply sound ethical practices according to the Ohio Counselors and Social Workers and Family Therapy Board and the Ohio Chemical Dependency Professionals Board.

2. Develop and promote healthy practices, self awareness and self care applying this personally, with clients, colleagues and other professionals.

3. Listen, speak and contribute to the quality of life of clients through comprehensive holistic service delivery according to specific agency policies and procedures.

4. Apply/utilize written and computer skills to maintain appropriate client and agency reports, records and documents.

5. Employ and interpret clear, concise and open communication skills including verbal, non-verbal and written communications in a professional manner.

6. Understand the history, philosophy, theoretical concepts/frameworks and clinical intervention skills related to human services professionals.

7. Engage in practices and techniques that encompass group facilitation, psycho-social assessment, behavior change and motivating practices working with diverse client populations.

Note: Letters in parenthesis relate to options (a) or (b).

Suggested Semester Sequence

First Semester		Credits
ENG-1010	College Composition I …OR	3
ENG-101H	Honors College Composition I	
HS-1100	Foundations of Substance Abuse and Addiction	3
HS-1300	Introduction to Human Services	3
PSY-1010	General Psychology …OR	3
PSY-101H	Honors General Psychology	
SPCH-1000	Fundamentals of Interpersonal Communication	3
		15

Second Semester		Credits
ENG-1020	College Composition II …OR	3
ENG-102H	Honors College Composition II	
HS-1110	Crisis Intervention and Child Abuse Issues (b)… OR	3-4
HS-1200	Treatment Modalities and Diversity Issues in Chemical Dependency (a)	
HS-1210	Prevention and Chemical Dependency (a)...OR	2-4
HS-1220	Diagnostic Tools and Legal Considerations (b)	
HS-1400	Group Work in the Human Services	2
HS-1850	Intro to Human Services Principles & Practices	5
SPCH-1010	Fundamentals of Speech Communication …OR	3
SPCH-101H	Honors Fundamentals of Speech Communication	_
		18 - 21

Third Semester		Credits
HS-2200	Ethics in Chemical Dependency (a)… OR	3-4
HS-2300	Family Theory and Services (b)	
HS-2600	Systems Approach to Case Management	4
HS-2850	Human Services Principles and Practices I	5
PSY-2020	Life Span Development …OR	4
PSY-202H	Honors Life Span Development	
HS-xxxx	Elective	2 - 3
		18 - 20

Fourth Semester		Credits
BIO-1050	Human Biology[1]	3
BIO-105L	Human Biology Laboratory[1]	1
HS-2530	Proposal Writing and Program Development	2
HS-2860	Human Services Principles and Practices II	3
HS-2990	Human Services Capstone Course [C]	2
MATH-1xxx	1000-level MATH course or higher	3
PSY-2070	Behavior Modification[2] …OR	3
PSY-2080	Abnormal Psychology[2]	_
		17

	PROGRAM TOTAL	68-73

[1]BIO-2331 & 2341 together will be accepted in place of BIO-1050 & 105L.
[2]PSY-2070 recommended for students pursuing generalist option, and PSY-2080 recommended for students pursing chemical dependency option.
[C] = Capstone course.

OPTIONS

(a) Alcohol/Chemical Dependency		Credits
Program Total for Option a = 69-70		
HS 1200	Treatment Modalities and Diversity Issues in Chemical Dependency	4
HS 1210	Prevention and Chemical Dependency	2
HS 2200	Ethics in Chemical Dependency	3

(b) Generalist Option		Credits
Program Total for Option b = 71-72		
HS 1110	Crisis Intervention and Child Abuse Issues	3
HS 1220	Diagnostic Tools and Legal Considerations	4
HS 2300	Family Theory and Services	4

INFORMATION TECHNOLOGY - BUSINESS SOLUTIONS

Associate of Applied Business in Information Technology - Business Solutions

  Degree integrates technology, business, marketing, critical thinking, communication, team work and problem solving with a three semester co-op to prepare for an entry-level job in Business Solution Development or for the progression to a four year degree.

Program Admission Requirements:
- High School Diploma/GED required.
- Eligibility for ENG-1010.
- Eligibility for MATH-1410 (appropriate score on Math Placement test or MATH-1270 or MATH-1280 with "C" or higher).

Other Information:
- Requires students to participate in several co-op experiences.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate orally and in writing to present clearly and effectively to a variety of business audiences including clients, colleagues and other professionals.

2. Operate in a diverse team environment with professionalism, integrity and accountability.

3. Adapt to change within their profession by demonstrating a commitment to continuous learning.

4. Apply foundational business management concepts, supply chain management principles, marketing and sales functions, and financial and accounting skills to interface between IT development and the stakeholder to meet or exceed their expectations.

5. Plan, organize and prioritize tasks in order to meet project deadlines.

6. Effectively utilize personal management skills, problem solving, and knowledge of the organization to identify and improve an organization's performance.

7. Leverage electronic technology and integrate with existing systems to solve business problems.

8. Develop, test, implement and maintain program interfaces (such as websites), supporting structures (such as back-end databases), and delivery platforms.

Suggested Semester Sequence

First Semester		Credits
ACCT-1310	Financial Accounting	4
BADM-1020	Introduction to Business	3
ENG-1010	College Composition I …OR	3
ENG-101H	Honors College Composition I	
IT-1025	Information Technology Concepts for Programmers	3
VC&D-1015	Digital Studio Basics	3
		16

Second Semester		Credits
BADM-1050	Professional Success Strategy	3
ENG-2151	Technical Writing	3
IT-1050	Programming Logic	3
ITWM-1010	Creating Web Pages with HTML and JavaScript	3
MATH-1410	Elementary Probability and Statistics I [1]	3
VC&D-1430	2D Design	3
		18

Summer Session		Credits
BADM-2830	Cooperative Field Experience	1
ECON-2620	Principles of Microeconomics	4
		5

Third Semester		Credits
ACCT-1340	Managerial Accounting … OR	3-4
BADM-xxxx	Business Elective	
BADM-2830	Cooperative Field Experience	1
ECON-2610	Principles of Macroeconomics	4
IT-2351	Enterprise Database Systems	4
ITMP-2620	Visual Basic Programming	4
		16 - 17

Fourth Semester		Credits
BADM-2830	Cooperative Field Experience	1
BADM-xxxx	Business Elective … OR	2 - 4
MARK-2010	Principles of Marketing … OR	
ACCT-2520	QuickBooks Immersion	
IT-2600	E-Business Programming Technologies [C]	3
IT-2700	Systems Analysis and Design	3
SPCH-1010	Fundamentals of Speech Communication	3
		12 - 14

	PROGRAM TOTAL	67 - 70

[1]Students who do not place into MATH-1410 on the assessment test must take MATH-1250 or higher as a prerequisite for this program. MATH-1800-1820 may not be used to meet this requirement.

[C] = Capstone course.

ELECTIVES

		Credits
BADM 1040	Principles & Practices of Customer Service	3
BADM 1121	Principles of Management and Organizational Behavior	4
BADM 2110	Production/Operations Management	3
BADM 2160	Introduction to Purchasing	3
BADM 2501	Business Strategies	3
BADM 2600	Introduction to World Trade	3

INFORMATION TECHNOLOGY - BUSINESS SOLUTIONS

Post-Degree Professional Certificate

Nearly all organizations rely on computer and information technology (IT) to conduct business and operate efficiently. Business Solutions Developers (also called Computer Systems Analysts and Systems Analysts) use IT tools to help organizations of all sizes achieve their goals. They may design and develop new business systems or enhance existing business systems by implementing new technological solutions.

Program Admission Requirements:
- Program requires students to have completed an Associate Degree or higher.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Operate in a diverse team environment with professionalism, integrity and accountability.

2. Adapt to change within their profession by demonstrating a commitment to continuous learning.

3. Plan, organize and prioritize tasks in order to meet project deadlines.

4. Effectively utilize personal management skills, problem solving and knowledge of the organization to identify and improve an organizations performance.

5. Leverage electronic technology and integrate with existing systems to solve business problems.

6. Develop, test, implement and maintain program interfaces (such as web sites), supporting structures (such as back-end databases), and delivery platforms

7. Communicate orally and in writing to present clearly and effectively to a variety of business audiences including clients, colleagues and other professionals.

Suggested Semester Sequence

First Semester		Credits
IT-1025	Information Technology Concepts for Programmers	3
IT-1050	Programming Logic	3
		6

Second Semester		Credits
IT-2351	Enterprise Database Systems	4
ITMP-2620	Visual Basic Programming	4
ITWM-1010	Creating Web Pages with HTML and JavaScript	3
		11

Summer Semester		Credits
IT-2600	E-Business Programming Technologies	3
IT-2700	Systems Analysis and Design	3
		6

	PROGRAM TOTAL	23

MOBILE APPLICATION DEVELOPMENT

Short-Term Certificate

Short term certificate in Mobile App Development. Students will learn the competencies required to analyze, design, develop and test mobile applications. Students explore the latest mobile platforms and prepare to publish apps. Skills acquired will help students to prepare for jobs in mobile application development and entrepreneurial self-publishing opportunities.

Degree: Students may apply credits towards Information Technology – Programming and Development degree program.

Program Admission Requirements:
- High School Diploma/GED not required, but highly recommended.
- Eligibility for ENG-1010.
- Eligibility for MATH-1410.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Engage in directed work as a member of a diverse software development and/or support team.

2. Analyze, design, develop and test mobile applications to address specified business problems using high-level languages, technologies and appropriate methodologies.

3. Test, package and prepare a mobile application for publishing for a given framework(s) following legal and ethical guidelines demonstrating an understanding of the publishing process.

4. Troubleshoot mobile application issues to determine the best solution to satisfy the customer.

Suggested Semester Sequence

First Semester		Credits
IT-1025	Information Technology Concepts for Programmers	3
IT-1050	Programming Logic	3
		6

Second Semester		Credits
ITMP-2650	Java Programming	4
IT-1100	Fundamentals of iOS Application Development	3
		7

Third Semester		Credits
IT-2351	Enterprise Database Systems	4
IT-2100	iOS Application Programming	4
IT-2110	Android Mobile App Development	3
		11

	PROGRAM TOTAL	24

INFORMATION TECHNOLOGY - NETWORKING SOFTWARE

Associate of Applied Business degree in Information Technology - Networking Software

Students will be prepared for careers dealing with network software systems analysis, planning and implementation to create, manage and support networks. Students will gain the necessary skills to analyze network system needs for design, installation, maintenance and management of network software systems. Skills acquired will assist students in preparing to take industry certification exams.

Program Admission Requirements:
- High School Diploma/GED not required, but highly recommended
- Eligibility for ENG-1010
- Eligibility for 1000-level MATH course

Other Information:
- Non-degree students may enroll for individual courses, providing they meet the course-specific prerequisites.
- Skills acquired prepare students to take industry certification.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate effectively utilizing verbal, written and presentation skills in-person, on the phone, and via the Internet with all levels in the organization.

2. Communicate appropriately with diverse audiences to provide high level customer service to internal and external constituents.

3. Work independently and effectively within a team to meet the needs of the organization.

4. Operate within diverse business cultures with professionalism, integrity and accountability.

5. Demonstrate ethical behavior and recognize legal issues.

6. Adapt to change within their profession by demonstrating a commitment to continuous learning and the flexibility to deal with different requirements from different clients with a wide range of personality styles and prior computer knowledge.

7. Plan, organize, and prioritize tasks in order to meet project deadlines.

8. Apply analytical, critical and creative thinking and problem solving/troubleshooting techniques to develop effective information technology solutions in the context of business needs.

9. Apply fundamental concepts of computer hardware, operating systems, business applications, networking, security, backup and recovery procedures to troubleshoot, maintain and support PC hardware and software to ensure an efficient and effective operation.

10. Apply principles of networking software to design, install, configure, and maintain secure, fault tolerant operation within a server based network environment, including local and remote access.

11. Sit for A+, Network +, Security + and MCP Certification Exams.

Suggested Semester Sequence

Summer Semester		Credits
EET-1015	Introduction to Computer Maintenance and Repair	3
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
IT-1025	Information Technology Concepts for Programmers	3
		9

First Semester		Credits
EET-1035	Operating Systems and Software for PC Technicians	4
EET-1055	Computer Hardware Support	4
ITNT-2300	Networking Fundamentals	3
IT-1050	Programming Logic	3
		14

Second Semester		Credits
ITNT-2310	TCP/IP	3
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
ITNT-2320	Network Administration I	3
Arts & Hum/Soc & Beh Sci (see AAB Degree requirements)		3
		12

Third Semester		Credits
BADM-1020	Introduction to Business	3
ENG-2151	Technical Writing	3
ITNT-2370	Network Security Fundamentals	3
ITNT-2380	Linux Administration	3
MATH-1xxx	1000-level MATH course or higher	3
		15

Fourth Semester		Credits
BADM-1050	Professional Success Strategy	3
ITNT-2420	Network Administration II	3
ITNT-2990	Networking Capstone [C]	3
	Natural Science (lecture)	3
		12
	PROGRAM TOTAL	62

[C] = Capstone course.

See pages 145-146 for the Computer Networking Hardware degree and Computer Maintenance Technology Certificate.

INFORMATION TECHNOLOGY - PROGRAMMING AND DEVELOPMENT

Associate of Applied Business degree in Information Technology - Programming and Development

Programmers, developers and software engineers design and develop many types of software, including computer games, business applications, operating systems, network control systems, and middleware. Students develop competencies in designing, implementing, integrating and maintaining software systems (including mainframes, websites, etc.) using a variety of languages and technologies. Skills acquired will assist students in preparing to take industry positions including, but not limited to, customer support, testing, programming and product development.

Program Admission Requirements:
- High School Diploma/GED not required, but highly recommended
- Eligibility for ENG-1010
- Eligibility for MATH-1410 (appropriate placement score or MATH-1270 or MATH-1250 with grade of "C" or higher).

Other Information:
- Non-degree students may enroll for individual courses, providing they meet the course-specific prerequisites.
- Skills acquired prepare students to take industry certification.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate effectively utilizing verbal, written and presentation skills to interview and educate stakeholders.

2. Operate in a diverse team environment with professionalism, integrity and accountability.

3. Explain and implement technologies that are impacted by legal and ethical issues.

4. Plan, organize and prioritize tasks in order to meet project deadlines.

5. Adapt to change within their profession by demonstrating a commitment to continuous research and learning.

6. Apply knowledge of organizational structures, models, processes, procedures, rules and distribution of power and authority in order to function as an effective IT resource that meets organizational goals.

7. Apply knowledge of programming, website maintenance, operating systems, networking and security to install, configure, troubleshoot and provide ongoing support and maintenance for technology related organizational systems.

8. Apply knowledge of programming (application, web, data and security) at the enterprise level and use industry standards, guidelines and appropriate tools to gather requirements, develop, test and quality assure organizational information technology business systems (new and existing) as part of a development team.

Suggested Semester Sequence

First Semester		Credits
ACCT-1310	Financial Accounting	4
BADM-1020	Introduction to Business	3
BADM-1050	Professional Success Strategy	3
ENG-1010	College Composition I OR	3
ENG-101H	Honors College Composition I	
IT-1025	Information Technology Concepts for Programmers	3
		16

Second Semester		Credits
ENG-2151	Technical Writing	3
IT-1050	Programming Logic	3
ITWM-1010	Creating Web Pages with HTML and JavaScript	3
MATH-1410	Elementary Probability and Statistics I [1]	3
SPCH-1010	Fundamentals of Speech Communication … OR	3
SPCH-101H	Honors Fundamentals of Speech Communication	3
BADM-xxxx	Business Elective	3
		18

Summer Semester		Credits
IT-2830	Cooperative Field Experience[2]	1
		1

Third Semester		Credits
IT-2351	Enterprise Database Systems	4
ITXX-xxxx	Programming Elective	3 - 4
ITMP-2650	Java Programming	4
ITWM-2320	Interactive Internet Programming	4
Soc & Beh Sci/Science (see AAB/AAS Degree Requirements)		3
		18 - 19

Fourth Semester		Credits
BADM-1300	Small Business Management	4
ITMP-2660	Data Structures & Algorithms	4
ITWM-2030	Active Server Pages … OR	4
IT-2600	E-Business Programming Technologies	3
IT-2700	Systems Analysis and Design [C]	3
		14 - 15

	PROGRAM TOTAL	67 - 69

ELECTIVES

Business Electives		Credits

Students must select from the following courses to fulfill the business elective requirement:

BADM 1040	Principles & Practices of Customer Service	3
BADM 1121	Principles of Management and Organizational Behavior	4
BADM 2010	Business Communications	3

INFORMATION TECHNOLOGY - Programming and Development (Continued)

Programming Electives   Credits
Students must select from the following courses to fulfill the programming elective requirement. Courses cannot be used for both a requirement and elective (in the case of an "or" selection in the semester sequence):

IT 1100	Fundamentals of iOS Application Development	3
IT 2100	iOS Application Programming	4
IT 2110	Android Mobile App Development	3
IT 2250	Excel: VBA Programming	3
IT 2400	Unity Game Programming	3
IT 2600	E-Business Programming Technologies	3
IT 2815	Special Topics - Introduction to Geographical Information Systems	3
ITMP 2620	Visual Basic Programming	4
ITMP 2670	C/C++ Programming Language	4
ITMP 2819	Special Topics: Visual C# .NET	4
ITWM 2030	Active Server Pages	4
ITWM 2806	Special Topics: JavaScript I	2

[1]Students who do not place into MATH-1410 on the assessment test must take MATH-1270 or MATH-1250 as a prerequisite for this program. MATH-1800-1820 may not be used to meet this requirement.
MATH-2010 can be taken in place of MATH-1410. Highly recommended for students planning to transfer to a four year university.
[2]Students who cannot complete a co-op experience due to a fulltime work commitment can request a waiver/substitution of another course to meet this requirement.

C = Capstone course.

INFORMATION TECHNOLOGY - Programming and Development
Post-Degree Professional Certificate
  Post-graduate certificate designed to update or enhance skills in object-oriented technologies. Students will experience the object-oriented environment of programming, database and Web technologies.

Program Admission Requirements:
- Eligibility for MATH-1410.
- Associate Degree or higher required.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Operate in a diverse team environment with professionalism, integrity and accountability.

2. Explain and implement technologies that are impacted by legal and ethical issues.

3. Plan, organize and prioritize tasks in order to meet project deadlines.

4. Adapt to change within their profession by demonstrating a commitment to continuous research and learning.

5. Apply knowledge of programming, website maintenance, operating systems, networking and security to install, configure, troubleshoot and provide ongoing support and maintenance for technology related organizational systems.

6. Apply knowledge of programming (application, web, data and security) at the enterprise level and use industry standards, guidelines and appropriate tools to gather requirements, develop, test and quality assure organizational information technology business systems (new and existing) as part of a development team.

Suggested Semester Sequence

First Semester		Credits
IT-1025	Information Technology Concepts for Programmers	3
IT-1050	Programming Logic	3
ITWM-1010	Creating Web Pages with HTML and JavaScript	3
		9

Second Semester		Credits
IT-xxxx	IT Elective Course	2 - 4
ITMP-2650	Java Programming … OR	4
ITMP-2670	C/C++ Programming Language	
		6 - 8

Third Semester		Credits
ITWM-2320	Interactive Internet Programming	4
IT-2351	Enterprise Database Systems	4
		8

Fourth Semester		Credits
IT-2700	Systems Analysis and Design	3
ITMP-2660	Data Structures & Algorithms	4
ITWM-2030	Active Server Pages … OR	3-4
IT-2600	E-Business Programming Technologies	
		10 - 11
	PROGRAM TOTAL	33 - 36

ELECTIVES
Programming Electives   Credits
Students must select from the following courses to fulfill the programming elective requirements. Courses cannot be used for both a requirement and elective (in the case of an "or" selection above):

IT 1100	Fundamentals of iOS Application Development	3
IT 2100	iOS Application Programming	4
IT 2110	Android Mobile App Development	3
IT 2250	Excel: VBA Programming	3
IT 2400	Unity Game Programming	3
IT 2600	E-Business Programming Technologies	3
IT 2815	Special Topics - Introduction to Geographical Information Systems	3
ITMP 2620	Visual Basic Programming	4
ITMP 2650	Java Programming	4
ITMP 2670	C/C++ Programming Language	4
ITMP 2680	Visual C# .NET Programming	4
ITWM 2030	Active Server Pages	4
ITWM 2806	Special Topics: JavaScript I	2

INFORMATION TECHNOLOGY – Web Application Development

Short-Term Certificate

  Short-term certificate in Web application development. Students will explore current technologies to analyze, design, develop, implement and test database driven Web applications. Skills acquired will prepare students for jobs as Web, Application, PHP, ASP.NET and Web 2.0 developers. Certificate is stackable with the Programming and Development degree.

Degree: Students may apply credits towards Information Technology – Programming and Development degree program.

Program Admission Requirements:
- High School Diploma/GED not required, but highly recommended.
- Eligibility for ENG-1010.
- Eligibility for MATH-1410.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Engage in directed work as a member of diverse software development and/or support team.

2. Analyze, design, develop and test web applications to address specified business problems using high-level languages, technologies and appropriate methodologies.

3. Prepare, test and deploy a web application within a given platform(s) and framework(s) following legal and ethical guidelines.

4. Troubleshoot web application issues to determine the best solution to satisfy the customer.

Suggested Semester Sequence

Summer Semester		Credits
IT-1025	Information Technology Concepts for Programmers	3
IT-1050	Programming Logic	3
		6

First Semester		Credits
ITMP-2650	Java Programming	4
ITWM-1010	Creating Web Pages with HTML and JavaScript	3
ITWM-2320	Interactive Internet Programming	4
		11

Second Semester		Credits
IT-2351	Enterprise Database Systems	4
IT-2600	E-Business Programming Technologies	3
ITWM-2030	Active Server Pages	4
		11
	PROGRAM TOTAL	28

INTEGRATED SYSTEMS ENGINEERING TECHNOLOGY

Associate of Applied Science degree in Integrated Systems Engineering Technology.

  The Integrated Systems Engineering Technology program prepares students to diagnose and resolve industrial equipment problems using good technical assessment skills and core electrical skills. The program also provides students with a base knowledge in advanced skills such as Programmable Logic Controllers (PLCs) electronics and digital applications, robotics, and process controls. Students completing the Integrated Systems Engineering Technology program will find jobs as instrument control technicians, maintenance repair technicians, electrical maintenance technicians, power plant control room operators, or integrated systems technicians.

Program Admission Requirements:
- High School Diploma/GED
- Eligibility for ENG-1010
- Eligibility for MATH-0950 or higher

Other Information:
- Options available in Integrated Systems Maintenance - Fluid Power and Programmable Logic Controllers, Environmental Systems Maintenance - Boiler, HVAC, and Welding.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Identify and use proper test equipment and tools, and use test information to solve system problems.

2. Use team skills to collaborate and perform in a professional and workman like fashion in a diverse environment to meet organizational goals and objectives.

3. Apply appropriate Math, science, and computer skills to support installation, troubleshooting, and maintenance of electrical equipment and systems.

4. Demonstrate effective comprehension and communication skills through listening, writing and speaking about problems, processes, and procedures to supervisors, team members, and management.

5. Diagnose and resolve equipment problems by utilizing good technical assessment skills that include planning, reliability, logical thinking, ability to use drawings, schematics and documentation, and a solid understanding of electrical maintenance theory and principles.

6. Assess for electrical and environmental hazards and follow lock out/tag out procedures according to applicable industry and regulatory standards.

7. Apply the core electrical skills including wiring methods, lighting, motor controls, troubleshooting and print reading and exhibit base knowledge in advanced skills such as PLC's, electronics and digital applications, robotics, and process controls.

8. Employ cross functional skills to differentiate between thermal, mechanical, fluid & electrical power systems and isolate fault to a particular sub-system.

INTEGRATED SYSTEMS ENGINEERING TECHNOLOGY (Continued)

Letters in parenthesis relate to Options (a) Integrated Systems Maintenance and (b) Environmental Systems Maintenance and (c) Welding

Suggested Semester Sequence

First Semester		Credits
ISET-1300	Mechanical/Electrical Print Reading	2
ISET-1310	Mechanical Power Transmission	2
ISET-1410	Applied Electricity I	3
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	3
MATH-1280	Advanced Intermediate Algebra or higher[1]	5
ISET-1450	Heating Ventilation Air Conditioning/ Refrigeration I (b) … OR	2
ISET-1100	Welding Blue Print Reading (c)	2
		15-17

Second Semester		Credits
BADM-2010	Business Communications … OR	3
BADM-201H	Honors Business Communications	
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
ISET-1340	Industrial Piping and Tubing	2
ISET-1420	Applied Electricity II (a)	3
ISET-1320	Fundamentals of Fluid Power (a) … OR	2-4
ISET-1460	Fundamental Boiler Technology (b) … OR	
ISET-2100	Gas Metal Arc Welding (MIG) [2](c) … OR	
ISET-2110	Gas Tungsten Arc Welding (TIG)[2] (c) … OR	
ISET-2120	Shielded Metal Arc Welding (STIG)[2] (c) … OR	
ISET-2130	OxyFuel Gas Welding [2](c) … OR	
		13 - 15

Summer Semester		Credits
ISET-2200	Industrial Motor Controls	3
SPCH-1000	Fundamentals of Interpersonal Communication	3
GEN-1010	Personal Development	2
		8

Third Semester		Credits
ENG-2151	Technical Writing	3
PSY-1050	Introduction to Industrial/Organizational Psychology	3
ISET-2240	Applied National Electric Code	3
ISET-2500	Programmable Logic Controllers Maintenance I	3
MET-2300	Fluid Power (a) … OR	2-4
ISET-2450	Heating Ventilation Air Conditioning/ Refrigeration II (b) … OR	
ISET-2100	Gas Metal Arc Welding (MIG) [2](c) … OR	
ISET-2110	Gas Tungsten Arc Welding (TIG) [2](c) … OR	
ISET-2120	Shielded Metal Arc Welding (STIG) [2](c) … OR	
ISET-2130	OxyFuel Gas Welding [2](c)	
		14 - 16

Fourth Semester		Credits
BADM-1050	Professional Success Strategy	3
ISET-2210	Commercial Wiring	3
ISET-2220	Fundamentals of Electronics and Instrumentation	3
ISET-2510	Programmable Logic Controllers Maintenance II[3] (a) … AND	2
ISET-2520	Programmable Logic Controllers Maintenance III [3] (a)… OR	2
ISET-2460	Applied Boiler Technology (b)	2
ISET-2990	Reliability Centered Maintenance [C]	3
		12 - 16
	PROGRAM TOTAL	67-68

OPTIONS
Program Total for Option a = 67
Program Total for Option b = 67
Program Total for Option c = 68

(a)Integrated Systems Maintenance		Credits
Fluid Power and Programmable Logic Controllers Option (a)		
ISET 1320	Fundamentals of Fluid Power	2
ISET 2510	Programmable Logic Controllers Maintenance II	2
ISET 2520	Programmable Logic Controllers Maintenance III	2
MET 2300	Fluid Power	3

(b)Environmental Systems Maintenance		Credits
Boiler Technology, HVAC, Option (b)		
ISET 1450	Heating Ventilation Air Conditioning/ Refrigeration I	2
ISET 1460	Fundamental Boiler Technology	3
ISET 2450	Heating Ventilation Air Conditioning/ Refrigeration II	2
ISET 2460	Applied Boiler Technology	2

(c)Welding		Credits
Welding, Option (c)		
ISET 1100	Welding Blue Print Reading	2
ISET 2100	Gas Metal Arc Welding (MIG)[1]	4
ISET 2110	Gas Tungsten Arc Welding (TIG)[1]	4
ISET 2120	Shielded Metal Arc Welding (STIG)[1]	4
ISET 2130	OxyFuel Gas Welding	4

[1]MATH-1800-1820 may not be used to meet this requirement.
[2]Students pursuing Welding option must complete two different welding courses to meet degree requirements.
[3]Consecutive eight week course.
[C] = Capstone course.

MECHATRONICS

Certificate of Proficiency

The purpose of the program is to familiarize students with supporting concepts of mechatronics which is defined as a design process that includes a combination of mechanical engineering, electrical engineering, control engineering and computer engineering. It therefore is a multidisciplinary field. Supporting courses include programming, electronics, fluid power, etc., that will provide the student with a broad familiarity with supporting topics.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Demonstrate in a lab environment using instrumentation ohms law, power laws for Direct Current (DC) and Alternation Current (AC) circuits.

2. Demonstrate welding blue print reading skills by performing stick welding operation to specification on a specimen

3. Use instrumentation to demonstrate fluid pressure and volume in a laboratory environment and explain the relationship between hydraulic piston area and pressure.

4. Program a Programmable Logic Controller to solve a stated problem

5. Demonstrate programming skills in a robotics environment to solve a stated problem. Use math to determine program behavior

Suggested Semester Sequence

First Semester		Credits
ISET-1300	Mechanical/Electrical Print Reading	2
ISET-1100	Welding Blue Print Reading	2
ISET-1310	Mechanical Power Transmission	2
ISET-1410	Applied Electricity I [1]	3
ISET-1420	Applied Electricity II	3
		12

Second Semester		Credits
ISET-2120	Shielded Metal Arc Welding (STICK)	4
ISET-1320	Fundamentals of Fluid Power	2
ISET-2200	Industrial Motor Controls	3
EET-1100	Introduction to Robotics	2
		11

Summer Semester		Credits
ISET-2500	Programmable Logic Controllers Maintenance I [2]	3
ISET-2510	Programmable Logic Controllers Maintenance II	2
ISET-2520	Programmable Logic Controllers Maintenance III	2
		7
	PROGRAM TOTAL	30

[1]ISET-1410, 1st 8 week course, must be completed before ISET-1420. Concurrent enrollment ISET-1300, Mechanical/Electrical Print Reading.
[2]ISET-2500, PLC Maintenance I, 1st 5 or 8 week course, must be completed before ISET-2510, PLC Maintenance II.

INTERIOR DESIGN

Associate of Applied Business degree in Interior Design

The interior designer helps to solve the functional and aesthetic design problems in residential and commercial interiors. The program prepares students for employment in interior design studios, architectural firms, and industry related fields.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate effectively verbally, in writing and through technology with clients, colleagues and industry professionals within the architectural and design community through an integrated design process.

2. Identify the needs of the client and work with members of the design team to professionally articulate design solutions.

3. Implement the scope of project through professional and ethical practice within the context of a global marketplace. Apply knowledge of business procedures to the design process through business forms, software and communication streams.

4. Recognize laws, codes, and standards that impact a design project and know where to research guideline information. Demonstrating competency in accessibility guidelines, universal design, and fire and life safety.

5. Execute design projects through the entire design process. Apply knowledge of design and architecture history, space planning, product knowledge, color, lighting, sustainable practices, building and environmental systems and construction to identify simple and complex problems and create design project goals. Developing creative solutions to present to client.

Suggested Semester Sequence

Summer Semester		Credits
ART-2020	Art History Survey: Prehistoric to Renaissance	3
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
INTD-1100	Hand Drafting and Sketching for Interiors	2
INTD-1111	Introduction to Interior Design	3
		14

First Semester		Credits
ART-1050	Drawing I	3
ART-2030	Art History Survey: Late Renaissance to Present	3
INTD-1120	Architectural Drafting for Interiors I	3
INTD-2330	Interior Design Materials and Sources	3
MATH-1xxx	1000-level MATH course or higher	3
		15

Second Semester		Credits
ART-1091	Color Theory and Application	3
INTD-1130	Architectural Drafting for Interiors II	3
INTD-2320	History of Interiors	3
INTD-2380	Fundamentals of Lighting	3
INTD-2430	Architectural Materials and Methods	3
		15

INTERIOR DESIGN (Continued)

Third Semester		Credits
INTD-2300	Interior Design Studio I	3
INTD-2350	Textiles	3
INTD-2470	Professional Practice of Interior Design	3
VC&D-1015	Digital Studio Basics	3
		12

Fourth Semester		Credits
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II … OR	3
SPCH-1000	Fundamentals of Interpersonal Communication	3
INTD-2400	Interior Design Studio II	3
INTD-2460	Interior Design Presentation	3
INTD-2851	Interior Design Field Experience [C]	1
PSY-1010	General Psychology … OR	3
PSY-101H	Honors General Psychology	3
		13

PROGRAM TOTAL   69

[C] = Capstone course.

INTERIOR DECORATING

Certificate of Proficiency

The interior decorator assists in providing solutions for aesthetic issues (furniture, color, textiles, and fabrics) in residential interiors and events. The certificate prepares students for employment in interior design sales and decorating.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally with clients, colleagues and industry professionals within the architectural and design community.

2. Identify the needs of the client and analyze what products or solutions are appropriate for their situation. Recommending appropriate selections for an interior space and closing the sale professionally and ethically.

3. Apply knowledge of office business procedures, policies, equipment, software and communication streams.

4. Implement the scope of project through professional practices and design sales protocols.

5. Apply knowledge of design and architecture history, furniture and furniture layouts, product knowledge, color, and lighting to develop creative solutions for the client.

Suggested Semester Sequence

Summer Semester		Credits
ART-2020	Art History Survey: Prehistoric to Renaissance	3
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
INTD-1100	Hand Drafting and Sketching for Interiors	2
INTD-1111	Introduction to Interior Design	3
IT-1010	Intro to Microcomputer Applications …OR	3
IT-101H	Honors Introduction to Microcomputer Applications	–
		14

First Semester		Credits
ART-2030	Art History Survey: Late Renaissance to Present	3
INTD-1300	Color and Light in Interiors	3
INTD-2330	Interior Design Materials and Sources	3
PSY-1010	General Psychology	3
		12

Second Semester		Credits
INTD-1330	Coordinating Spaces	3
INTD-1350	Business of Interiors	3
INTD-1400	Interior Decorating Field Experience	1
INTD-2320	History of Interiors	3
		10

PROGRAM TOTAL   36

MANUFACTURING INDUSTRIAL ENGINEERING TECHNOLOGY

Associate of Applied Science degree in Manufacturing Industrial Engineering Technology

The Manufacturing Industrial Engineering Technology program is accredited by ABET (The Accreditation Board of Engineering Technology). Manufacturing is instrumental to the function of society today and will remain indispensable for the future. This program ensures application of appropriate manufacturing processes and cost effective utilization of manufacturing tools, materials, equipment and manpower to manufacture parts and maintain equipment. The program provides graduates with a unique blend of theoretical and hands-on-knowledge with computer integration in a manufacturing environment that directly corresponds to modern applications used in industry. Graduates are employed in a wide variety of areas relevant to manufacturing industries. (Certificate programs are available in 3D Digital Design and Manufacturing Technology, Digital Design & Product Launch, Computer-Aided Drafting, Computer-Integrated Manufacturing, Machine Tools Operation, and Quality Control.)

Program Admission Requirements: Applications may be submitted to the Engineering Office MHCS 122 on the Metropolitan Campus after meeting the following requirements:

- High School Diploma/GED
- Complete ENG-1010 or ENG-101H
- Complete MATH-1280
- Complete the following: MET-1100, MET-1120, MET-1230, and MET-1240.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate effectively and efficiently with diverse individuals and teams, all levels of employees, customers, and suppliers by means of verbal, written (memos, reports, emails, etc.), graphics, symbols, and effective listening skills and using appropriate technology.

2. Complete tasks and projects on schedule through the effective use of time management, appropriate math, and teamwork that fosters inclusion, synergized efforts in problems identification, and troubleshooting for successful resolution of problems towards the achievement of set goals and objectives.

MANUFACTURING INDUSTRIAL ENGINEERING TECHNOLOGY (Continued)

3. Apply quality systems, principles, concepts and utilize appropriate math, measurement and statistical tools and technology to improve processes, product quality, and to enhance productivity.

4. Incorporate safety awareness, principles and practices in every aspect work and as a way of life, including machine safety, environmental safety, chemical safety, and personal\employee protection.

5. Apply knowledge of machines' principles and operation, tools and materials, requisite mathematics and physics, to select operation parameters in order to program, setup, and operate production manufacturing equipment, and also to be able to, troubleshoot and diagnose both numerically/computer numerically (NC/CNC) controlled machines, and programmable logic controlled (PLC) equipment.

6. Apply the knowledge of material science, machining tolerances, blueprint/schematics, and hands on skills in welding, burning, pipefitting, rigging, the use of basic hand tools and mobile equipment for the fabrication of designed parts incorporating accepted industry methods.

7. Apply the knowledge of the principles of drafting and the communication of ideas, designs and visualization skills as the language of the engineering field, including the creation and interpretation of drawings using proper dimensioning and tolerancing for size and geometry, and use of computer aided drawing programs to incorporate proper industry acceptable standards and conventions.

8. Apply the basic principles of equipment maintenance, troubleshooting and problem solving techniques to maintain industrial machines that ensures the production of quality products.

9. Exhibit independence in the pursuits of continuous professional development.

10. Model ethical behavior in professional responsibilities.

Suggested Semester Sequence

First Semester		Credits
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MATH-1280	Advanced Intermediate Algebra	5
MET-1100	Technology Orientation	2
MET-1120	Computer Applications and Programming	2
MET-1230	Drawing & AutoCAD [1]	3
MET-1240	Machine Tools and Manufacturing Processes	3
		18

Second Semester		Credits
MET-1300	Engineering Materials and Metallurgy	3
MET-1400	CNC Programming and Operation	3
MATH-1510	Trigonometry … OR	3
MATH-151H	Honors Trigonometry	
MET-2000	CAD/CAM Processes … OR	3
MET-1250	Introduction To Additive Manufacturing	
MET-2421	Fundamentals of Engineering Economics	2
		14

Third Semester		Credits
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II	
MET-2041	CAD II & GD&T … OR	3
MET-2940	Additive Manufacturing Internship I	1
MET-xxxx	Elective [2] … OR	3
CNST-1410	Architectural CAD I	
PHYS-1210	College Physics I [3]	4
MET-xxxx	Elective	3
		14 - 16

Fourth Semester		Credits
HLTH-1230	Standard First Aid and Personal Safety	1
MET-2500	Fundamentals of Products Development and Manufacture [C] … OR	3
MET-2190	Additive Manufacturing Project Based/Team Oriented Capstone	
MET-xxxx	Elective	3
PHYS-1220	College Physics II	4
Arts & Hum/Soc & Beh Sci (see AAS Degree requirements)		3
		14

	PROGRAM TOTAL	60 - 62

ELECTIVES

Automation Engineering Technology   Credits
Electives recommended for students interested in the field of Automation Engineering Technology:

MET 2140	Manufacturing Automation and Control	3
MET 2220	Advanced CAD/CAM Processes	3
MET 2300	Fluid Power	3

Drafting & Design Engineering Technology   Credits
Electives recommended for students interested in the field of Drafting & Design Engineering Technology:

CNST 1410	Architectural CAD I	3
MET 2150	3D Printing & Scanning for Reverse Engineering and Inspection	3
MET 2601	3D Solid Modeling	3

Quality Engineering Technology   Credits
Electives recommended for students interested in the field of Quality Engineering Technology:

MET 2400	Statistical Quality Control	3
MET 2730	Lean Manufacturing	3
MET 2740	Quality Manufacturing	3

Additive Manufacturing   Credits
Electives recommended for students interested in the field of Additive Manufacturing:

MET 1260	Product Ideation and Design	3
MET 2150	3D Printing & Scanning for Reverse Engineering and Inspection	3
MET 2601	3D Solid Modeling	3

[1]MET-1220 & 1200 together will be accepted in place of MET-1230.
[2]Students interested in pursuing all of the quality engineering elective courses, must take MET-2400 in the third semester, as it is a prerequisite for MET-2740.
[3]PHYS 2310 & PHYS 2320 will be accepted in place of PHYS-1210 & PHYS-1220. PHYS 2310 & PHYS 2320 are recommended for students planning to transfer.

[C] = Capstone course.

3D DIGITAL DESIGN & MANUFACTURING TECHNOLOGY

Certificate of Proficiency

This program is for the students who wish to acquire skills in the operations of Coordinate Measuring Machines (CMM), Computer Numerically Controlled (CNC), 3D printing, and the use of CAD/CAM packages in order to gain entry-level employments in varying operations involved in manufacturing with emphases on Additive Manufacturing. Students will get background knowledge to aid them in the field of (AM) Additive Manufacturing, (RP) Rapid Prototyping, and 3D Printing. The students will also be prepared to take the examination for the nationally recognized SME/MSOE/NAMII Certification in Additive Manufacturing. There will be two (2) short term certificates: 1) Digital Design & Product Innovation, 2)Digital Manufacturing & Product Launch, which together, lead to the award of Certificate of Proficiency in 3D Digital Design & Manufacturing Technology. Students may apply credits earned in this program toward the completion of Associate of Applied Science (AAS) degree in Manufacturing Industrial Engineering Technology.

Degree: Students may apply credits toward the Manufacturing Industrial Engineering Technology degree program.

Program Admission Requirements:

- Obtain Program Application from the program coordinator (UTC 171), program manager (UTC 170), or career coordinator (UTC Registration).
- High School Diploma or GED
- ENG 0990
- MATH-0960 or MATH-0980 or eligibility for MATH-1280.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate effectively and efficiently with diverse individuals and teams, all levels of employees, customers, and suppliers by means of verbal, written (memos, reports, emails, etc.), graphics, symbols, and effective listening skills and using appropriate technology.

2. Complete tasks and projects on schedule through the effective use of time management, appropriate math skills, and teamwork that fosters inclusion, synergized efforts in problems identification, and troubleshooting for successful resolution of problems towards the achievement of set goals and objectives.

3. Apply quality systems, principles, concepts and utilize appropriate math, measurement and statistical tools and technology to improve processes, product quality, and to enhance productivity.

4. Incorporate safety awareness, principles and practices in every aspect of work and as a way of life, including machine safety, environmental safety, chemical safety, and personal/employee protection.

5. Apply knowledge of machines' principles and operation, tools and materials to select operations' parameters in order to program, setup, and operate production manufacturing equipment, and also to be able to troubleshoot and diagnose 3D Printers, Laser Scanners, (CMM) Coordinate Measuring Machines, and (CNC) Computer Numerically Controlled machines.

6. Apply the knowledge of material science, machine tolerances, blueprint/schematics, and hands on skills in Additive Manufacturing equipment for the development of designed parts and incorporating accepted industry methods.

7. Apply the knowledge of the principles of drafting and the communication of ideas, designs and visualization skills as the language of the engineering field, including the creation and interpretation of drawings using proper dimensioning and tolerance for size and geometry, and use of 3D Modeling drawing programs to incorporate proper industry acceptable standards and conventions.

8. Apply the basic principles of equipment maintenance, troubleshooting and problem solving techniques to maintain industrial machines that ensures the production of quality products.

Suggested Semester Sequence

First Semester		Credits
MET-1230	Drawing & AutoCAD	3
MET-1240	Machine Tools and Manufacturing Processes	3
MET-1250	Introduction To Additive Manufacturing	3
MET-1260	Product Ideation and Design	3
		12

Second Semester		Credits
MET-1100	Technology Orientation	2
MET-1300	Engineering Materials and Metallurgy	3
MET-2150	3D Printing & Scanning for Reverse Engineering and Inspection	3
MET-2421	Fundamentals of Engineering Economics	2
MET-2601	3D Solid Modeling	3
		13

Summer Semester		Credits
MET-1400	CNC Programming and Operation	3
MET-2190	Additive Manufacturing Project Based/Team Oriented Capstone	3
MET-2940	Additive Manufacturing Internship	1
		7
	PROGRAM TOTAL	32

DIGITAL DESIGN & PRODUCT INNOVATION

Short-Term Certificate

   This short-term certificate is one of the two programs, which, upon completion, lead to the award of a certificate of proficiency in Additive Manufacturing. This program is intended for students who wish to gain employment in modern manufacturing enterprises, involving but not limited to additive manufacturing. The skills and concepts taught also prepare students to take the nationally recognized Society of Manufacturing Engineering (SME)-Additive Manufacturing Consortium's Certification in Additive Manufacturing.

Degree: Students may apply credits toward the Manufacturing Industrial Engineering Technology degree program.

Program Admissions Requirements:

- Obtain Program Application from the program coordinator (UTC 171), program manager (UTC 170), or career coordinator (UTC Registration).
- High School Diploma/GED
- Completion of ENG-0990 or higher.
- Completion of MATH-0950 or higher.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate effectively and efficiently with diverse individuals and teams, all levels of employees, customers, and suppliers by means of verbal, written (memos, reports, emails, etc.), graphics, symbols, and effective listening skills and using appropriate technology.

2. Complete tasks and projects on schedule through the effective use of time management, appropriate math skills, and teamwork that fosters inclusion, synergized efforts in problems identification, and troubleshooting for successful resolution of problems towards the achievement of set goals and objectives.

3. Apply quality systems, principles, concepts and utilize appropriate math, measurement and statistical tools and technology to improve processes, product quality, and to enhance productivity.

4. Incorporate safety awareness, principles and practices in every aspect of work and as a way of life, including machine safety, environmental safety, chemical safety, and personal/employee protection.

5. Apply the knowledge of the principles of drafting and the communication of ideas, designs and visualization skills as the language of the engineering field, including the creation and interpretation of drawings using proper dimensioning and tolerance for size and geometry, and use of 3D Modeling drawing programs to incorporate proper industry acceptable standards and conventions.

Suggested Semester Sequence

First Semester		Credits
MET-1230	Drawing & AutoCAD	3
MET-1240	Machine Tools and Manufacturing Processes	3
MET-1250	Introduction To Additive Manufacturing	3
MET-1260	Product Ideation and Design	3
		12

Second Semester		Credits
MET-1100	Technology Orientation	2
MET-2421	Fundamentals of Engineering Economics	2
		4

	PROGRAM TOTAL	16

DIGITAL MANUFACTURING AND PRODUCT LAUNCH

Short-Term Certificate

This short-term certificate is one of the two programs, which, upon completion, lead to the award of certificate of proficiency in Additive Manufacturing. This program is intended for students who wish to gain employment in modern manufacturing enterprises, involving but not limited to additive manufacturing. The skills and concepts taught also prepare students to take the nationally recognized Society of Manufacturing Engineering (SME)-Additive Manufacturing Consortium's Certification in Additive Manufacturing. This is a stackable certificate program that requires completion of the short term certificate in Digital Design & Product Innovation prior to starting this program.

Degree: Students may apply credits toward the manufacturing Industrial Engineering Technology degree program.

Program Admissions Requirements:

- Obtain Program Application from the program coordinator (UTC 171), program manager (UTC 170), or career coordinator (UTC Registration).
- High School Diploma/GED
- Completion of ENG-0990 or higher.
- Completion of MATH-0950 or higher.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate effectively and efficiently with diverse individuals and teams, all levels of employees, customers, and suppliers by means of verbal, written (memos, reports, emails, etc.), graphics, symbols, and effective listening skills and using appropriate technology.

2. Complete tasks and projects on schedule through the effective use of time management, appropriate math skills, and teamwork that fosters inclusion, synergized efforts in problems identification, and troubleshooting for successful resolution of problems towards the achievement of set goals and objectives.

3. Apply quality systems, principles, concepts and utilize appropriate math, measurement and statistical tools and technology to improve processes, product quality, and to enhance productivity.

4. Incorporate safety awareness, principles and practices in every aspect of work and as a way of life, including machine safety, environmental safety, chemical safety, and personal/employee protection.

5. Apply knowledge of machines' principles and operation, tools and materials to select operations' parameters in order to program, setup, and operate production manufacturing equipment, and also to be able to troubleshoot and diagnose 3D Printers, Laser Scanners, (CMM) Coordinate Measuring Machines, and (CNC) Computer Numerically Controlled machines.

6. Apply the knowledge of material science, machine tolerances, blueprint/schematics, and hands on skills in Additive Manufacturing equipment for the development of designed parts and incorporating accepted industry methods.

7. Apply the knowledge of the principles of drafting and the communication of ideas, designs and visualization skills as the language of the engineering field, including the creation and interpretation of drawings using proper dimensioning and tolerance for size and geometry, and use of 3D Modeling drawing programs to incorporate proper industry acceptable standards and conventions.

8. Apply the basic principles of equipment maintenance, troubleshooting and problem solving techniques to maintain industrial machines that ensures the production of quality products.

Suggested Semester Sequence

First Semester		Credits
MET-1300	Engineering Materials and Metallurgy	3
MET-2150	3D Printing & Scanning for Reverse Engineering and Inspection	3
MET-2601	3D Solid Modeling	3
		9

Second Semester		Credits
MET-1400	CNC Programming and Operation	3
MET-2190	Additive Manufacturing Project Based/ Team Oriented Capstone	3
MET-2940	Additive Manufacturing Internship I	1
		7

	PROGRAM TOTAL	16

COMPUTER-AIDED DRAFTING (CAD)

Certificate of Proficiency

This program is for students who wish to acquire computer drafting skills for entry-level positions in a variety of industries. Students will get background knowledge to aid them in developing 2D drawings with an introduction to 3D CAD.

Degree: Students may apply credits toward the Manufacturing Industrial Engineering Technology degree.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate effectively and efficiently with diverse individuals and teams, all levels of employees, customers, and suppliers by means of verbal, written (memos, reports, emails, etc.), graphics, symbols, and effective listening skills and using appropriate technology.

2. Complete tasks and projects on schedule through the effective use of time management, appropriate math skills, and teamwork that fosters inclusion, synergized efforts in problems identification, and troubleshooting for successful resolution of problems towards the achievement of set goals and objectives.

3. Apply quality systems, principles, and concepts, and utilize appropriate math, measurement and statistical tools and technology to improve processes and product quality, and to enhance productivity.

4. Incorporate safety awareness, principles and practices in every aspect of work and as a way of life, including machine safety, environmental safety, chemical safety, and personal/employee protection.

5. Utilize modern CAD tools and technology and appropriate engineering drafting principles to create and revise drawings that meet design and quality specifications.

6. Apply the knowledge of the principles of drafting and the communication of ideas, designs and visualization skills as the language of the engineering field, including the creation and interpretation of drawings using proper dimensioning and tolerancing for size and geometry, and use of computer aided drawing programs to incorporate proper industry acceptable standards and conventions.

Suggested Semester Sequence

First Semester		Credits
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MATH-1280	Advanced Intermediate Algebra	5
MET-1100	Technology Orientation	2
MET-1120	Computer Applications and Programming	2
MET-1230	Drawing & AutoCAD [1]	3
		15

Second Semester		Credits
MET-1240	Machine Tools and Manufacturing Processes	3
MET-1300	Engineering Materials and Metallurgy	3
MET-1400	CNC Programming and Operation	3
MET-2041	CAD II & GD&T	3
MET-2601	3D Solid Modeling	3
		15

| | PROGRAM TOTAL | 30 |

[1]MET-1200 & 1220 together will be accepted in place of MET-1230.

COMPUTER-INTEGRATED MANUFACTURING (CIM)

Certificate of Proficiency

This program is for students who wish to acquire skills in the 2D/3D modeling of engineering designs and graphics based programming and production of engineering parts, and operation of computer integrated manufacturing systems. Graduates of this program qualify for entry-level employment in traditional and computer integrated modern manufacturing industries.

Degree: Students may apply credits toward the Manufacturing Industrial Engineering Technology degree program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate effectively and efficiently with diverse individuals and teams, all levels of employees, customers, and suppliers by means of verbal, written (memos, reports, emails, etc.), graphics, symbols, and effective listening skills and using appropriate technology.

2. Complete tasks and projects on schedule through the effective use of time management, appropriate math skills, and teamwork that fosters inclusion, synergized efforts in problem identification, and troubleshooting for successful resolution of problem towards the achievement of set goals and objectives.

3. Apply quality systems, principles, and concepts, and utilize appropriate math, measurement and statistical tools and technology to improve processes, product quality, and to enhance productivity.

4. Incorporate safety awareness, principles and practices in every aspect of work and as a way of life, including machine safety, environmental safety, chemical safety, and personal/employee protection.

5. Apply knowledge of math, machine principles, tools and materials to operate and monitor CNC machines, modify CNC code that ensures quality outcomes.

6. Interpret geometrical dimensioning and tolerancing (GD&T) concepts: symbols, instructions used in establishing form, locations, and orientation tolerances of parts' features to ensure that quality engineering parts are machined and assembled to achieve desired functionality.

7. Apply operational principles, software, concepts, tools, equipment, and machines of Computer Integrated Manufacturing Systems (CIMS), including: programming CIMS to implement production scheduling, materials movement, parts production and quality control; and setting up and operating machine and interface equipment in a computer-integrated environment to produce quality parts at low and competitive costs.

COMPUTER-INTEGRATED MANUFACTURING (CIM) (Continued)

Suggested Semester Sequence

First Semester		Credits
MATH-1280	Advanced Intermediate Algebra	5
MET-1100	Technology Orientation	2
MET-1120	Computer Applications and Programming	2
MET-1230	Drawing & AutoCAD	3
MET-1240	Machine Tools and Manufacturing Processes	3
		15

Second Semester		Credits
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MET-1400	CNC Programming and Operation	3
MET-2000	CAD/CAM Processes	3
MET-2140	Manufacturing Automation and Control	3
MET-2421	Fundamentals of Engineering Economics	2
MET-xxxx	Elective	1 - 3
		15 - 17
	PROGRAM TOTAL	30 - 32

MACHINE TOOLS OPERATION
Certificate of Proficiency

This program provides a certificate of proficiency to students who wish to acquire skills in manual machine tools operations and programming of computer controlled machine tools for entry-level employment in the metal working industry.

Degree: Students may apply credits toward the Manufacturing Industrial Engineering Technology degree program or the Mechanical Engineering Technology degree program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate effectively and efficiently with diverse individuals and teams, all levels of employees, customers, and suppliers by means of verbal, written (memos, reports, emails, etc.), graphics, symbols, and effective listening skills and using appropriate technology.

2. Complete tasks and projects on schedule through the effective use of time management, appropriate math skills, and teamwork that fosters inclusion, synergized efforts in problem identification, and troubleshooting for successful resolution of problems towards the achievement of set goals and objectives.

3. Apply quality systems, principles, and concepts, and utilize appropriate math, measurement and statistical tools and technology to improve processes and product quality, and to enhance productivity.

4. Incorporate safety awareness, principles and practices in every aspect of work and as a way of life, including machine safety, environmental safety, chemical safety, and personal/employee protection.

5. Apply the knowledge of material science, machining tolerances, the use of basic blueprint/schematics, hands on skills and machine operation for the manufacturing of parts.

6. Apply the knowledge of materials science, quality control concepts, blueprints/schematics reading and interpretation, and skills in machine tools operation and basic machine maintenance to accomplish the manufacture of engineering parts.

Suggested Semester Sequence

First Semester		Credits
MATH-1280	Advanced Intermediate Algebra	5
MET-1100	Technology Orientation	2
MET-1120	Computer Applications and Programming	2
MET-1230	Drawing & AutoCAD [1]	3
MET-1240	Machine Tools and Manufacturing Processes	3
		15

Second Semester		Credits
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MET-1300	Engineering Materials and Metallurgy	3
MET-1400	CNC Programming and Operation	3
MET-2421	Fundamentals of Engineering Economics	2
MET-2000	CAD/CAM Processes	3
MET-xxxx	Elective	1 - 3
		15 - 17
	PROGRAM TOTAL	30 - 32

[1]MET-1200 & 1220 together will be accepted in place of MET-1230.

QUALITY CONTROL
Certificate of Proficiency

This certificate is geared to those seeking an entry position in the area of quality control in industry. Students are introduced to the quality control of mechanical parts and systems. Inspection of parts is done using the skills of blueprint reading of Geometric Dimensioning, Tolerancing and inspection tools and equipment. Application of math and communication principles.

Degree: Students may apply credits toward the Manufacturing Industrial Engineering Technology degree.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate effectively and efficiently with diverse individuals and teams, all levels of employees, customers, and suppliers by means of verbal, written (memos, reports, emails, etc.), graphics, symbols, and effective listening skills and using appropriate technology.

2. Complete tasks and projects on schedule through the effective use of time management, appropriate math skills, and teamwork that fosters inclusion, synergized efforts in problem identification, and troubleshooting for successful resolution of problems towards the achievement of set goals and objectives.

3. Apply quality systems, principles, and concepts, and utilize appropriate math, measurement, data collection and statistical tools and technology to improve processes and product quality, and to enhance productivity.

QUALITY CONTROL (Continued)

4. Incorporate safety awareness, principles and practices in every aspect of work and as a way of life, including machine safety, environmental safety, chemical safety, and personal/employee protection.

5. Interpret drawings using proper dimensioning, tolerancing for size and geometry, and proper industry standards and conventions.

Suggested Semester Sequence

First Semester		Credits
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MATH-1280	Advanced Intermediate Algebra	5
MET-1100	Technology Orientation	2
MET-1230	Drawing & AutoCAD	3
MET-1240	Machine Tools and Manufacturing Processes	3
		16

Second Semester		Credits
HLTH-1230	Standard First Aid and Personal Safety	1
MET-1400	CNC Programming and Operation	3
MET-2400	Statistical Quality Control	3
MET-2421	Fundamentals of Engineering Economics	2
MET-2500	Fundamentals of Products Development and Manufacture	3
MET-2730	Lean Manufacturing	3
		15
	PROGRAM TOTAL	31

MARKETING

Associate of Applied Business degree in Marketing

The program addresses the broad scope of activities performed in the buying and selling of goods and services to the consuming sectors of the economy. Students are prepared for a variety of marketing positions via a broad working knowledge of the theories and practices of marketing. General marketing, international marketing and professional selling are options.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use interpersonal, organizational, time management, problem solving, office etiquette, professionalism and leadership skills when working independently or as part of a team on marketing projects.

2. Apply basic business skills in achieving organizational goals including: strategic planning, inventory management, software, database skills, and customer relations and negotiation skills.

3. Use general math, accounting principles and appropriate software to calculate pricing, cost of goods, break even, discounts, margins, profits, advertising measurements and produce budget reports.

4. Communicate verbally, visually, and in writing effectively and efficiently to accomplish organizational goals in the areas of leadership, product development, project management and interpersonal relationships to achieve and maintain a prominent competitive position within the industry.

5. Identify markets and customers; execute, evaluate, and control marketing mix elements (product, price, place, profit, promotion) to meet project goals.

Suggested Semester Sequence

First Semester		Credits
BADM-1020	Introduction to Business	3
ECON-2620	Principles of Microeconomics	4
ENG-1010	College Composition I …..OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications…..OR	3
IT-101H	Honors Introduction to Microcomputer Applications	3
SPCH-1010	Fundamentals of Speech Communication	3
		16

Second Semester		Credits
ACCT-1310	Financial Accounting	4
ENG-1020	College Composition II …..OR	3
ENG-102H	Honors College Composition II	
MARK-2010	Principles of Marketing	3
MATH-1250	Contemporary Mathematics or higher[1]	4
		14

Third Semester		Credits
BADM-2160	Introduction to Purchasing	3
ECON-2610	Principles of Macroeconomics	4
MARK-2020	Principles of Salesmanship	3
MARK-2270	Principles of Advertising	3
PHIL-1020	Introduction to Logic …..OR	3
PHIL-2060	Business Ethics	_
		16

Fourth Semester		Credits
BADM-1121	Principles of Management and Organizational Behavior	4
BADM-2150	Business Law	4
BADM-2501	Business Strategies [C]	3
MARK-2260	Sales Promotion and Public Relations	3
MARK-2500	Business-to-Business/Organizational Marketing	3
		17
	PROGRAM TOTAL	63

[1]MATH-1800-1820 may not be used to meet this requirement. MATH-1270 or higher recommended for students planning to transfer.

[C] = Capstone course.

MASSAGE THERAPY

Associate of Applied Science degree in Massage Therapy

The Associate of Applied Science Degree in Massage Therapy provides students with the competencies that enable them to learn not only the basic massage therapy skills but also the advanced techniques in a clinical setting. Students will be eligible for massage licensure before completing this associate degree by receiving a Certificate of Proficiency in Massage Therapy. All of the credits in the certificate of proficiency are transferrable to the associate degree. Students who are awarded the associate degree will also receive the Short-Term Certificate in Advanced Massage Therapy.

Program Manager: 216-987-2426

Program Admission Requirements: Application must be submitted to the Massage Therapy Program Office at the Eastern Campus.

- HS/GED Required. Official high school transcripts must be mailed directly to the Massage Therapy Program. Hand delivered or faxed transcripts will not be accepted.
- Eligibility for ENG-1010, or completion of ENG-0990, with a "C" or higher. Non-native English speaking applicants with a foreign country high school diploma: Completion of ESL-1310, English as a Second Language: Grammar for Communication III, and ESL-1320, English as a Second Language: Reading and Writing III, before acceptance to the Massage Therapy Program.
- Eligibility for MATH-1060 or MATH-1190, or completion of MATH-0950 or MATH-0990 with a "C" or higher.
- GPA. If courses already taken at Tri-C or other college/university, overall minimum of 2.5 GPA. (High school GPA is used for students without a college/university GPA.) Students with an overall GPA lower than 2.5, but no lower than 2.0, can be accepted as "Conditional Status" students. Contact the Program Manager for more information regarding "Conditional Acceptance" and "Conditional Status."

Other Information:
- 25 in the day program and 25 in the evening/weekend program (a combined total of 50 each year which includes students in the Certificates and Degree programs).
- Students must submit evidence of good health and required immunizations before acceptance to the program. Student will not be accepted or dropped from the program if significant limiting health conditions are present to prevent student from performing the essential functions of a Massage Therapy student and/or constitute a hazard to health and safety of patients or classmates.
- Once accepted, students must maintain a 2.5 GPA throughout program. Students with an Overall and/or MT course GPA below 2.5 but no lower than 2.0 will be placed on Conditional Status. Students who drop below 2.0 GPA are dismissed from the program.
- Students will be placed on Conditional Status if a "U," Unsatisfactory, is received for any of the Massage Therapy courses during Academic Progress Reporting in the first semester.
- Name change court documents are required. See the Massage Therapy Application Packet for details.
- Accepted applicants are required to attend group orientation prior to the start of Fall Semester.
- All science and math courses must have been completed within seven years at the time of admission to the program.

- Pass/No Pass (P/NP) and Audit (A) grading options for English and Math or any other courses in the Massage Therapy Program Sequence not accepted.
- Students must meet all college, program and medical board admissions requirements before acceptance to the program. This includes timely and correct completion of all required paperwork. Students are then accepted on a "first-come, first-served" basis, once per year.
- Ohio medical board accepts the Federation of State Massage Therapy Board's Massage and Bodywork Licensing Examination (MBLEx) for licensure. Applicants for Ohio massage licensure are required to sit for and pass the MBLEx and then apply to the Ohio medical board for licensure. Students must complete all courses in the Certificate of Proficiency or Post-Degree Professional Certificate sequence with a letter grade of "C" or better and meet all other college, program, and Ohio medical board requirements.
- Massage Therapy students are also eligible to sit for the National Certification Board for Therapeutic Massage and Bodywork (NCBTMB) exam after graduating with the Certificate of Proficiency or Post-Degree Certificate and meeting NCBTMB requirements. The NCBTMB is not accepted by the Ohio medical board, but by some other states.
- All massage courses in the sequence can only be repeated once to improve a grade.
- Health Careers criminal background check required (see page 73).
- Important: Arrests, charges or convictions of criminal offenses may be cause to deny or limit licensure or employment opportunities and may limit the student's ability to obtain federal, state, and other financial aid. Students are encouraged to investigate these possibilities before applying to the Massage Therapy Program. In addition to the criminal background check required before acceptance to the program, the State Medical Board of Ohio requires that all applicants for massage licensure must submit BCII and FBI fingerprints and a criminal background check as part of the massage licensure application process. Please see Rule 4731-4-02(D) of the Ohio Administrative Code for factors the medical board may consider when reviewing the results of a criminal record check.

Program Outcomes: The Massage Therapy AAS program is designed to prepare students to demonstrate the following program outcomes:

1. Use observation, verbal and other assessment tools to plan and perform a general Swedish massage and hospital-based massage.

2. Show proficiency in anatomy and physiology studies, massage theory and techniques to be eligible to sit for the OSMB licensure examination.

3. Apply the knowledge of anatomy to the study of cells, tissues, and different systems of the body.

4. Apply the detailed knowledge of anatomy as it relates to the study of muscles, joints, and ligaments.

5. Use the knowledge of physiological principles as it relates to the different systems of the body and massage and hospital-based massage.

6. Apply the knowledge of pathological conditions as they indicate or contraindicate the applications of massage and hospital-based massage.

MASSAGE THERAPY (Continued)

7. Apply the principles of pharmacology as it relates to the indications and contraindications to massage therapy and hospital-based massage.

8. Develop a business plan that will address principles of small business management, entrepreneurship and marketing for a private practice.

9. Demonstrate work ethic, hygiene, office management, customer service, time management, and team work skills needed in a clinic and hospital setting

10. Communicate verbally and in writing, including SOAP charting, to clients, colleagues and other health care professionals.

11. Conduct yourself professionally, ethically and legally, especially regarding sexual and substance abuse issues, according to the State Medical Board of Ohio and American Massage Therapy Code of Ethics and Standards of Practice including identifying and referring patients to an appropriate licensed healthcare professional as needed.

12. Apply emergency, safety and sanitation protocols according to OSHA and CDC regulatory standards for a clinic and hospital setting.

13. Use physical observation, verbal investigation and advanced assessment techniques to create and perform advanced treatment plan for disorders to the human body.

14. Educate the patient, within the scope of practice as defined by the State Medical Board of Ohio, on the principles of treatment used for specific disorders, proper body mechanics as well as suggest appropriate modalities.

15. Sit for State Medical Board of Ohio Massotherapy License and the NCBTMB.

Suggested Semester Sequence

First Semester		Credits
MT-1242	Somatic Studies I	3
MT-1302	Massage Therapy I	2
MT-1312	Applied Musculo-Skeletal Anatomy	3
MT-2301	Pathology for Massage Therapists	3
MA-1010	Introduction to Medical Terminology	2
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
		16

Second Semester		Credits
EMT-1310	Cardiopulmonary Resuscitation	1
MT-1272	Somatic Studies II	3
MT-1331	Massage Therapy II	3
MT-1321	Functional Assessment in Massage Therapy	2
MT-2350	Massage Therapy Clinic I	3
PSY-1010	General Psychology …OR	3
PSY-101H	Honors General Psychology	
SPCH-1000	Fundamentals of Interpersonal Communication	3
		18

Summer Session		Credits
MATH-1060	Survey of Mathematics or higher	3
MT-1280	Somatic Studies III	2
MT-2360	Massage Therapy Clinic II	3
MT-2200	Medical Massage	2
MT-2701	Comprehensive Somatic Studies for Massage Therapists	1
MT-2991	Comprehensive Massage Therapy [C]	1
		12

Third Semester		Credits
BADM-1300	Small Business Management	4
MT-2311	Advanced Massage Therapy	3
MT-2870	Advanced Massage Practicum	2
PHIL-2050	Bioethics …OR	3
PHIL-205H	Honors Bioethics	
PSY-2020	Life Span Development …OR	4
PSY-202H	Honors Life Span Development	
		16
	PROGRAM TOTAL	62

[C] = Capstone course.

ADVANCED MASSAGE THERAPY

Short-Term Certificate

This certificate offers graduates of the Post-Degree Professional Certificate in Massage Therapy and Certificate of Proficiency in Massage Therapy and Associate of Applied Degree students in Massage Therapy, advanced bodywork training which enhances a massage therapist's career by preparing them for positions in specialized areas of massage therapy.

Students graduating with the AAS degree in Massage Therapy will also receive the Short-Term Advanced Massage Therapy Certificate.

Financial Assistance funds cannot be applied towards this program.

Program Admission Requirements: Application must be submitted to the Massage Therapy Program Office at the Eastern Campus.

- Must be awarded a Certificate of Proficiency or Post-Degree Professional Certificate in Massage Therapy
- Submit an "Intention to Complete the Short-Term Certificate" to the Massage Therapy Program. Call 216-987-2418 for more information.
- High School Diploma/GED.
- Overall minimum of 2.5 GPA. (High school GPA is used for students without a college/ university GPA.) Students with an overall GPA lower than 2.5, but no lower than 2.0, can be accepted as "Conditional Status" students. Contact the Program Manager for more information regarding "Conditional Acceptance" and "Conditional Status."
- Once accepted, students must maintain a 2.5 GPA throughout program. Students with an overall and/or MT course GPA below 2.5, but no lower than 2.0 will be placed on Conditional Status.

ADVANCED MASSAGE THERAPY
(Continued)

Other Information:
- All students graduating with an Associate of Applied Science Degree in Massage Therapy will also receive the Short-Term Certificate in Massage Therapy.
- Students must submit evidence of good health and required immunizations before acceptance to program. Students will not be accepted or dropped from the program if significant limiting health conditions are present to prevent student from performing the essential functions of a Massage Therapy student and/or constitute a hazard to health and safety of patients or classmates.
- Criminal background check required (see page 73).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use physical observation, verbal investigation and advanced assessment techniques to create and perform advanced treatment plan for disorders to the human body.

2. Educate the patient, within the scope of practice as defined by the State Medical Board of Ohio, on the principles of treatment used for specific disorders, proper body mechanics as well as suggest appropriate modalities.

3. Apply the knowledge of pathological conditions as they indicate or contraindicate the applications of massage.

4. Apply the principles of pharmacology as it relates to the indications and contraindications to massage therapy.

5. Demonstrate work ethic, hygiene, office management, customer service, time management and team work skills needed in a clinic setting.

6. Communicate verbally and in writing, including SOAP charting, to clients, colleagues and other health care professionals.

7. Conduct yourself professionally, ethically and legally, especially regarding sexual and substance abuse issues, according to the State Medical Board of Ohio and American Massage Therapy Code of Ethics and Standards of Practice including identifying and referring patients to an appropriate licensed healthcare professional as needed.

8. Apply emergency, safety and sanitation protocols according to OSHA and CDC regulatory standards.

Suggested Semester Sequence

Summer Semester		Credits
MT-2200	Medical Massage	2
MT-1321	Functional Assessment in Massage Therapy	2
		4

First Semester		Credits
MT-2311	Advanced Massage Therapy	3
MT-2870	Advanced Massage Practicum	2
		5
	PROGRAM TOTAL	9

MASSAGE THERAPY
Certificate of Proficiency

The Certificate of Proficiency in Massage Therapy is an 800-hour program which enables full-time students to graduate in one year and then sit for the Federation of State Massage Therapy Boards' Massage and Bodywork Licensing Examination (MBLEx). All applicants for State Medical Board of Ohio massage licensure are required to pass the MBLEx. Students are also eligible to sit for the National Certification Board for Therapeutic Massage and Bodywork (NCBTMB) exam after graduating with this certificate and meeting NCBTMB requirements. The NCBTMB is not accepted by the Ohio medical board, but is accepted by some other states. Also after completing this certificate students can transfer all of the credits to the Associate of Applied Science Degree in Massage Therapy program. Students who are awarded the associate degree will also receive the Short-Term Certificate in Advanced Massage Therapy.

Program Admission Requirements: Application must be submitted to the Massage Therapy Program Office at the Eastern Campus:

- High School Diploma/GED. Official transcripts must be mailed directly to the Massage Therapy program. Hand delivered or faxed transcripts will not be accepted.
- Eligibility for ENG-1010, or completion of ENG-0990, with a "C" or higher.
- Non-native English speaking applicants with a foreign country high school diploma: Completion of ESL-1310, English as a Second Language: Grammar for Communication III, and ESL-1320, English as a Second Language: Reading and Writing III, before acceptance to the Massage Therapy Program.
- Eligibility for MATH-1060 or MATH-1190, or completion of MATH-0950 or MATH-0990 with a "C" or higher.
- GPA. If courses already taken at Tri-C or other college/university, overall minimum of 2.5 GPA. (High school GPA is used for students without a college/university GPA.) Students with an overall GPA lower than 2.5, but no lower than 2.0, can be accepted as "Conditional Status" students. Contact the Program Manager for more information regarding "Conditional Acceptance" and "Conditional Status."

Other Information:
- 25 students accepted per year for day program and 25 per year for evening/weekend program (a combined total of 50 each year which includes students in certificates and degree programs).
- Students must submit evidence of good health and required immunizations before acceptance to the program. Student will not be accepted or dropped from the program if significant limiting health conditions are present to prevent student from performing the essential functions of a Massage Therapy student and/or constitute a hazard to health and safety of patients or classmates.
- Once accepted, students must maintain a 2.5 GPA throughout program. Students with an Overall and/or MT course GPA below 2.5 but no lower than 2.0 will be placed on Conditional Status Students who drop below 2.0 GPA are dismissed from the program.

MASSAGE THERAPY (Continued)

- Students will be placed on Conditional Status if a "U," Unsatisfactory, is received for any of the Massage Therapy courses during Academic Progress Reporting in the first semester.
- Name change court documents are required. See the Massage Therapy Application Packet for details.
- Accepted applicants are required to attend group orientation prior to the start of Fall Semester.
- All science courses must have been completed within seven years at the time of admission to the program.
- Pass/No Pass (P/NP) and Audit (A) grading options for English and Math or any other courses in the Massage Therapy Program Sequence not accepted.
- Students must meet all college, program and medical board admissions requirements before acceptance to the program. This includes timely and correct completion of all required paperwork. Students are then accepted on a "first-come, first-served" basis, once per year.
- Ohio medical board accepts the Federation of State Massage Therapy Board's Massage and Bodywork Licensing Examination (MBLEx) for licensure. Applicants for Ohio massage licensure are required to sit for and pass the MBLEx and then apply to the Ohio medical board for licensure. Students must complete all courses in the Certificate of Proficiency or Post-Degree Professional Certificate sequence with a letter grade of "C" or better and meet all other college, program, and Ohio medical board requirements.
- Massage Therapy students are also eligible to sit for the National Certification Board for Therapeutic Massage and Bodywork (NCBTMB) exam after graduating with the Certificate of Proficiency or Post-Degree Certificate and meeting NCBTMB requirements. The NCBTMB is not accepted by the Ohio medical board.
- All massage courses in the sequence can only be repeated once to improve a grade.
- Criminal background check required (see page 73).
- Important: Arrests, charges or convictions of criminal offenses may be cause to deny or limit licensure or employment opportunities and may limit the student's ability to obtain federal, state, and other financial aid. Students are encouraged to investigate these possibilities before applying to the Massage Therapy Program. In addition to the criminal background check required before acceptance to the program, the State Medical Board of Ohio requires that all applicants for massage licensure must submit BCI and FBI fingerprints and a criminal background check as part of the massage licensure application process. Please see Rule 4731-4-02(D) of the Ohio Administrative Code for factors the medical board may consider when reviewing the results of a criminal record check.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use observation, verbal and other assessment tools to plan and perform a general Swedish massage and hospital-based massage.

2. Show proficiency in anatomy and physiology studies, massage theory and techniques to be eligible to sit for the OSMB licensure examination.

3. Apply the knowledge of anatomy to the study of cells, tissues, and different systems of the body.

4. Apply the detailed knowledge of anatomy as it relates to the study of muscles, joints, and ligaments.

5. Use the knowledge of physiological principles as it relates to the different systems of the body and massage and hospital-based massage.

6. Apply the knowledge of pathological conditions as they indicate or contraindicate the applications of massage and hospital-based massage.

7. Apply the principles of pharmacology as it relates to the indications and contraindications to massage therapy and hospital-based massage.

8. Develop a business plan that will address principles of small business management, entrepreneurship and marketing for a private practice.

9. Demonstrate work ethic, hygiene, office management, customer service, time management and team work skills needed in a clinic and hospital setting.

10. Communicate verbally and in writing, including SOAP charting, to clients, colleagues and other health care professionals.

11. Conduct yourself professionally, ethically and legally, especially regarding sexual and substance abuse issues, according to the State Medical Board of Ohio and American Massage Therapy Code of Ethics and Standards of Practice including identifying and referring patients to an appropriate licensed healthcare professional as needed.

12. Apply emergency, safety and sanitation protocols according to OSHA and CDC regulatory standards for a clinic and hospital setting.

13. Sit for State Medical Board of Ohio Massotherapy License and the NCBTMB.

Suggested Semester Sequence

First Semester		Credits
MT-1242	Somatic Studies I	3
MT-1302	Massage Therapy I	2
MT-1312	Applied Musculo-Skeletal Anatomy	3
MT-2301	Pathology for Massage Therapists	3
ENG-1010	College Composition I ...OR	3
ENG-101H	Honors College Composition I	—
		14

Second Semester		Credits
MT-2350	Massage Therapy Clinic I	3
MT-1331	Massage Therapy II	3
MT-1321	Functional Assessment in Massage Therapy	2
MT-1272	Somatic Studies II	3
		11

Summer Semester		Credits
MT-1280	Somatic Studies III	2
MT-2360	Massage Therapy Clinic II	3
MT-2200	Medical Massage	2
MT-2701	Comprehensive Somatic Studies for Massage Therapists	1
MT-2991	Comprehensive Massage Therapy	1
		9

	PROGRAM TOTAL	34

MASSAGE THERAPY

Post-Degree Professional Certificate

The Post-Degree Professional Certificate is for students who already have an associate, bachelor, or higher degree and want to become licensed massage therapists. This 800-hour program enables full-time students to graduate in one year and then sit for the Federation of State Massage Therapy Boards' Massage and Bodywork Licensing Examination (MBLEx). All applicants for State Medical Board of Ohio massage licensure are required to pass the MBLEx. Students are also eligible to sit for the National Certification Board for Therapeutic Massage and Bodywork (NCBTMB) exam after graduating with this certificate and meeting NCBTMB requirements. The NCBTMB is not accepted by the Ohio medical board, but is accepted by some other states. Post-Degree Professional Certificate Students can return after graduation and complete the Short-Term Certificate in Advanced Massage Therapy, which offers advanced bodywork training that enhances a licensed massage therapist's career.

Program Manager: 216-987-2426

Program Admission Requirements: Massage Therapy Application must be submitted to the Massage Therapy Program Office at the Eastern Campus.

- High School Diploma/GED. Official high school transcripts must be mailed directly from the educational institution to the Massage Therapy Program. Hand delivered and faxed transcripts will not be accepted.
- GPA required: Students with an overall GPA lower than 2.5, but no lower than 2.0, can be accepted as "Conditional Status" students. Contact the Program Manager for more information regarding "Conditional Acceptance" and "Conditional Status.

Other Information:
- 25 students accepted per year for day program and 25 per year for evening/weekend program (a combined total of 50 each year which includes students in degree and certificate programs).
- Students will be placed on Conditional Status if a "U," Unsatisfactory, is received for any of the Massage Therapy courses during Academic Progress Reporting in the first semester.
- Associate, Bachelor or higher degree required from a recognized institution. Official college/university transcripts must be mailed directly from the educational institution to the Massage Therapy Program and Tri-C Office of the Registrar. Hand delivered and faxed transcripts will not be accepted.
- Non-native English Speaking Applicants with foreign country college degree: Completion of ESL-1310, English as a Second Language: Grammar for Communication III, and ESL-1320, English as a Second Language: Reading and Writing III before acceptance to the Massage Therapy Program.
- Tri-C Health Careers Criminal background check required (see page 73).
- Important: Arrests, charges or convictions of criminal offenses may be cause to deny or limit licensure or employment opportunities and may limit the student's ability to obtain federal, state, and other financial aid. Students are encouraged to investigate these possibilities before applying to the Massage Therapy Program. In addition to the criminal background check required before acceptance to the program, the State Medical Board of Ohio requires that all applicants for massage licensure must submit BCII and FBI fingerprints and a criminal background check as part of the massage licensure application process. Please see Rule 4731-4-02(D) of the Ohio Administrative Code for factors the medical board may consider when reviewing the results of a criminal record check.

- Name change court documents are required. See the Massage Therapy Application Packet for details.
- Students must submit evidence of good health and required immunizations before acceptance to the program. Student will not be accepted or dropped from the program if significant limiting health conditions are present to prevent student from performing the essential functions of a Massage Therapy student and/or constitute a hazard to health and safety of patients or classmates.
- Once accepted, students must maintain a 2.5 GPA throughout program. Students with an Overall and/or MT course GPA below 2.5 but no lower than 2.0 will be placed on Conditional Status. Students who drop below 2.0 GPA are dismissed from the program.
- Accepted applicants are required to attend group orientation prior to the start of Fall Semester.
- All science courses must have been completed within seven years at the time of admission to the program.
- Pass/No Pass (P/NP) and Audit (A) grading options for English and Math or any other courses in the Massage Therapy Program Sequence not accepted.
- Students must meet all college, program and medical board admissions requirements before acceptance to the program. This includes timely and correct completion of all required paperwork. Students are then accepted on a "first-come, first-served" basis, once per year.
- Ohio medical board accepts the Federation of State Massage Therapy Board's Massage and Bodywork Licensing Examination (MBLEx) for licensure. Applicants for Ohio massage licensure are required to sit for and pass the MBLEx and then apply to the Ohio medical board for licensure. Students must complete all courses in the Certificate of Proficiency or Post-Degree Professional Certificate sequence with a letter grade of "C" or better and meet all other college, program, and Ohio medical board requirements.
- Massage Therapy students are also eligible to sit for the National Certification Board for Therapeutic Massage and Bodywork (NCBTMB) exam after graduating with the Certificate of Proficiency or Post-Degree Certificate and meeting NCBTMB requirements. The NCBTMB is not accepted by the Ohio medical board but by some other states.
- All massage courses in the sequence can only be repeated once to improve a grade.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use observation, verbal and other assessment tools to plan and perform a general Swedish massage and hospital-based massage.
2. Show proficiency in anatomy and physiology studies, massage theory and techniques to be eligible to sit for the OSMB licensure examination.
3. Apply the knowledge of anatomy to the study of cells, tissues, and different systems of the body.

MASSAGE THERAPY (Continued)

4. Apply the detailed knowledge of anatomy as it relates to the study of muscles, joints, and ligaments.
5. Use the knowledge of physiological principles as it relates to the different systems of the body and massage and hospital-based massage.
6. Apply the knowledge of pathological conditions as they indicate or contraindicate the applications of massage and hospital-based massage.
7. Apply the principles of pharmacology as it relates to the indications and contraindications to massage therapy and hospital-based massage.
8. Develop a business plan that will address principles of small business management, entrepreneurship and marketing for a private practice.
9. Demonstrate work ethic, hygiene, office management, customer service, time management and team work skills needed in a clinic and hospital setting.
10. Communicate verbally and in writing, including SOAP charting, to clients, colleagues and other health care professionals.
11. Conduct yourself professionally, ethically and legally, especially regarding sexual and substance abuse issues, according to the State Medical Board of Ohio and American Massage Therapy Code of Ethics and Standards of Practice including identifying and referring patients to an appropriate licensed healthcare professional as needed.
12. Apply emergency, safety and sanitation protocols according to OSHA and CDC regulatory standards for a clinic and hospital setting.
13. Sit for State Medical Board of Ohio Massotherapy License and the NCBTMB.

Suggested Semester Sequence

First Semester		Credits
MT-1242	Somatic Studies I	3
MT-1302	Massage Therapy I	2
MT-1312	Applied Musculo-Skeletal Anatomy	3
MT-2301	Pathology for Massage Therapists	3
		11

Second Semester		Credits
MT-1331	Massage Therapy II	3
MT-1321	Functional Assessment in Massage Therapy	2
MT-1272	Somatic Studies II	3
MT-2350	Massage Therapy Clinic I	3
		11

Summer Session		Credits
MT-1280	Somatic Studies III	2
MT-2200	Medical Massage	2
MT-2360	Massage Therapy Clinic II	3
MT-2701	Comprehensive Somatic Studies for Massage Therapists	1
MT-2991	Comprehensive Massage Therapy	1
		9

	PROGRAM TOTAL	31

MECHANICAL ENGINEERING TECHNOLOGY

Associate of Applied Science degree in Mechanical Engineering Technology

The Mechanical Engineering Technology program is accredited by ABET (The Accreditation Board of Engineering Technology). It is designed to prepare students to pursue a career in the areas of design, development, manufacturing, installation, measurement, testing, operation and control, maintenance and sales of mechanical devices and systems. The curriculum emphasizes hands-on-learning and the use of current computer-aided techniques found in industry. Graduates are employed in a variety of industries such as automotive, manufacturing, aero-space, construction, transportation, power generation, petrochemical, as well as in research and development laboratories. Skills in the area of creating and interpreting engineering drawings, the practices and procedures of manufacturing, and principles of product design are emphasized.

Program Admission Requirements: Applications may be submitted to the Engineering Office MHCS 122 on the Metropolitan Campus after meeting the following requirements:

- High School Diploma/GED
- ENG-1010 or ENG-101H
- MATH-1280
- Complete the following: MET-1100, MET-1200, MET-1240

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate effectively and efficiently with diverse individuals and teams, all levels of employees, customers, and suppliers by means of verbal, written (memos, reports, emails, etc.), graphics, symbols, and effective listening skills and using appropriate technology.

2. Complete tasks and projects on schedule through the effective use of time management, appropriate math skills, and teamwork that fosters inclusion, synergized efforts in problems identification, and troubleshooting for successful resolution of problems towards the achievement of set goals and objectives.

3. Apply quality systems, principles, concepts and utilize appropriate math, measurement and statistical tools and technology to improve processes, product quality, and to enhance productivity.

4. Incorporate safety awareness, principles and practices in every aspect of work and as a way of life, including machine safety, environmental safety, chemical safety, and personal/employee protection.

5. Utilize modern tools and technology (CAD/CAE) and apply appropriate engineering design principles, to design or assist in the design, testing and troubleshooting of manufacturable quality products, such as mechanisms and primary drives, including mechanical drive, power transmission, hydraulics, and pneumatics systems.

6. Apply the knowledge of material science, machining tolerances, blueprint/schematics, and hands on skills in welding, burning, pipefitting, rigging, the use of basic hand tools and mobile equipment for the fabrication of designed parts incorporating accepted industry methods.

MECHANICAL ENGINEERING TECHNOLOGY (Continued)

7. Apply the knowledge of the principles of drafting and the communication of ideas, designs and visualization skills as the language of the engineering field, including the creation and interpretation of drawings using proper dimensioning and tolerancing for size and geometry, and use of computer aided drawing programs to incorporate proper industry acceptable standards and conventions.

8. Engage in life-long learning to adapt to innovation and change.

9. Model ethical behavior in professional engagements.

Suggested Semester Sequence

First Semester		Credits
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MATH-1280	Advanced Intermediate Algebra [1]	5
MET-1100	Technology Orientation	2
MET-1120	Computer Applications and Programming	2
MET-1230	Drawing & AutoCAD	3
		15

Second Semester		Credits
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II	
MATH-1510	Trigonometry [1] … OR	3
MATH-151H	Honors Trigonometry [1]	
MET-1240	Machine Tools and Manufacturing Processes	3
MET-1300	Engineering Materials and Metallurgy	3
MET-1601	Technical Statics	3
PHYS-1210	College Physics I [2]	4
		19

Third Semester		Credits
MET-1621	Technical Dynamics	3
MET-2041	CAD II & GD&T	3
MET-2200	Strength of Materials	3
MET-2240	Mechanical Engineering Lab	1
MET-2300	Fluid Power … OR	3
MET-2320	Thermal Dynamics	
PHYS-1220	College Physics II [2]	4
		17

Fourth Semester		Credits
HLTH-1230	Standard First Aid and Personal Safety	1
MET-2601	3D Solid Modeling	3
MET-2700	Machine Design C	4
Arts & Hum/Soc & Beh Sci (see AAS Degree requirements)		3
Arts & Hum (see AAB/AAS degree requirements)		3
		14

PROGRAM TOTAL   65

[1] MATH-1580 & MATH-1610 will be accept in place of MATH-1280 & 1510

[2] PHYS 2310 & PHYS 2320 will be accepted in place of PHYS 1210 & PHYS 1220

C = Capstone course.

MEDIA ARTS AND STUDIES

Associate of Applied Business degree in Media Arts and Studies

In the associate degree program, the student will receive a general education in the appreciation and application of traditional art and design to motion media, along with the fundamentals of tactical, strategic communications. Each student will experience an in-depth exercise in devising media strategies to fulfill specific communications missions. Each student will learn the fundamentals of every aspect of the media production process. Following this, students will be enabled to specialize in a single aspect of that process and will develop familiarity and expertise in their chosen craft. The program offers specialty training in Video Editing, Motion Graphics, and Production.

Program Admission Requirements:
- High School Diploma/GED
- Eligibility for ENG-1010

Other Information:
- Non-degree students may enroll in individual courses if they meet prerequisites.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use listening and knowledge of technical terms/industry jargon to effectively communicate both verbally and in writing with clients, colleagues and other professionals.

2. Demonstrate proper business etiquette, appearance, teamwork behaviors and understand legal regulations, industry ethics, production schedules and budgets in order to be a contributing member of the production team.

3. Apply the basics of digital video filmmaking production following set protocol including camera operation, lighting, audio production and producing skills.

4. Use editing software, motion graphics and animation to produce files for various media and delivery formats that meet customer requirements.

5. Apply the appropriate writing style and visual design principles for a given medium that meets the production goal and persuades the audience to action.

6. Create a production plan and schedule that meets client needs, uses resources appropriately and is on time and within budget.

7. Communicate verbally and in writing to clients to secure and maintain business.

Suggested Semester Sequence

First Semester		Credits
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MARS-1020	Story: Pre-production Methods and the Art of Story in Motion Media	3
VC&D-1015	Digital Studio Basics	3
VCDV-1180	Introduction to Digital Video and Digital Filmmaking	3
VCPH-1261	Photography I [1]	3
		15

MEDIA ARTS AND STUDIES (Continued)

Second Semester		Credits
JMC-1310	Film Appreciation	3
MARS-1120	Media Arts and Studies Colloquium	1
MATH-1060	Survey of Mathematics or higher	3
RAT-1100	Sound Recording and Design	3
VC&D-1430	2D Design	3
VCDV-2180	Digital Cinematography	3
		16

Third Semester		Credits
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II	
MARS-2110	Editing	3
MARS-2620	Applied Integrated Media (AIM) I: Real World Pre-production	3
VCDV-2480	Motion Graphics for Digital Video	3
VCDV-2280	Advanced Digital Video and Digital Filmmaking: Exploring Genre and Technique	3
XXXX	Select 1 elective from below list	3
		18

Fourth Semester		Credits
BADM-1050	Professional Success Strategy	3
MARS-2720	Applied Integrated Media (AIM) II: Real World Production and Post-Production for Motion Media[2]	3
MARS-2990	Media Arts and Studies Professional Prep and Portfolio Review [C]	2
XXXX	Select 1 elective from below list	3
Social & Behavioral Sci (See AAB/AAS degree requirements)		3
		14

Summer Semester		Credits
MARS-2940	MARS Field Experience	1 - 2
		1 - 2

	PROGRAM TOTAL	64 - 65

ELECTIVES   Credits
In the 3rd and 4th semesters, students choose a three-credit course from the following courses as an elective or they may choose another 2000-level technical elective in the related disciplines of MARS, RAT, JMC, VC&D.

MARS 2120	Advanced Editing	3
MARS 2220	Advanced Crew and Set Operations for Motion Media	3
MARS 2xxx	Media Arts and Studies Elective	3
VC&D 2815	3D Studio	3
VC&D 2816	3D Game Design	3
VCDV 2380	Visual Effects Compositing for Digital Video	3
VCDV 2580	Digital Versatile Disk Authoring & Design	3
VCDV 2680	Advanced Digital Cinematography	3
VCDV 2780	Advanced Motion Graphics	3

[1]May be waived for students who can demonstrate proficiency in digital photography. Portfolio review and interview with VCPH faculty required.
[2]Course may be repeated for elective credit.
[C] = Capstone course.

MEDIA ARTS AND STUDIES (Motion Graphics and Visual Storytelling)
Short-Term Certificate

This Short-Term Certificate in Motion Graphics will appeal to both newcomers and seasoned professionals in the areas of broadcast television, corporate and event video, web design and animation, who seek to demonstrate a level of proficiency in using animated text and images to communicate a message and enhance production value for digital film and motion media productions.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use listening and knowledge of technical terms/industry jargon to effectively communicate both verbally and in writing with clients, colleagues and other professionals.

2. Demonstrate proper business etiquette, appearance, teamwork behaviors and understand legal regulations, industry ethics, production schedules and budgets in order to be a contributing member of the production team.

3. Use editing software, motion graphics and animation to produce files for various media and delivery formats that meet customer requirements.

4. Apply knowledge of mission and story structure to produce a written treatment and storyboards for a motion media production.

Suggested Semester Sequence

First Semester		Credits
MARS-1020	Story: Pre-production Methods and the Art of Story in Motion Media	3
MARS-1120	Media Arts and Studies Colloquium	1
VC&D-1015	Digital Studio Basics	3
VC&D-1430	2D Design	3
VCDV-1180	Introduction to Digital Video and Digital Filmmaking	3
VCPH-1261	Photography I [1]	3
		16

Second Semester		Credits
VCDV-2480	Motion Graphics for Digital Video	3
VCIM-2270	Animation for the Web and Media … OR	3
ART-2151	Animation for Web and Media	
VCPH-1450	Digital Imaging I	3
		9

Third Semester		Credits
VCDV-2780	Advanced Motion Graphics	3
		3

	PROGRAM TOTAL	28

[1]May be waived for students who can demonstrate proficiency in digital photography. Portfolio review and interview with VCPH faculty required.

MEDIA ARTS AND STUDIES
(Digital Video Editing)
Short-Term Certificate

These courses are selected from the Media Arts and Studies degree sequence to provide a streamlined path to proficiency in video editing and digital storytelling.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use listening and knowledge of technical terms/industry jargon to effectively communicate both verbally and in writing with clients, colleagues and other professionals.

2. Demonstrate proper business etiquette, appearance, teamwork behaviors and understand legal regulations, industry ethics, production schedules and budgets in order to be a contributing member of the production team.

3. Use industry-standard motion media editing software applications to professionally edit motion media projects.

4. Apply knowledge of mission and story structure to produce a written treatment and storyboards for a motion media production.

5. Create a production plan and schedule that meets a client needs, uses resources appropriately and is on time and within budget.

6. Communicate verbally and in writing to clients to secure and maintain business.

Suggested Semester Sequence

First Semester		Credits
VC&D-1015	Digital Studio Basics	3
MARS-1020	Story: Pre-production Methods and the Art of Story in Motion Media	3
MARS-1120	Media Arts and Studies Colloquium	1
VCDV-1180	Introduction to Digital Video and Digital Filmmaking	3
		10

Second Semester		Credits
MARS-2xxx	Media Arts and Studies Elective	3
MARS-2110	Editing	3
		6

Summer Semester		Credits
MARS-2120	Advanced Editing	3
		3

| | PROGRAM TOTAL | 19 |

MEDICAL ASSISTING
Associate of Applied Science degree in Medical Assisting

The Medical Assistant is a multi-skilled professional who assists the physician with the administrative and clinical aspects of patient care. The program includes courses in administrative, clinical, and communication skills; ethical and legal standards of medical practice; and a "hands on" clinical practicum experience. Graduates are eligible to take the National Certifying Examination given by the American Association of Medical Assistants (AAMA).

Program Manager: 216-987-4439

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center while meeting the following requirements:

- Students must request an application packet from the Health Careers Enrollment Center (216-987-4247) for comprehensive admissions information.
- High School Diploma/GED
- Completion of ENG-1010 or ENG-101H with a grade of "C" or higher.
- Completion of MATH-1060 or higher, with a grade of "C" or higher.
- Demonstrate a typing speed of 40 wpm on proficiency exam administered in the Nursing and Allied Health Career's Student Success Center (Metropolitan Campus), or a keyboarding course such as IT-1000 with a grade of "B" or higher, or AOS-1220 Speed Building for those students familiar with the keyboard but need to increase their speed.
- GPA required: 2.00 overall

Other Information:
- 20 students per campus accepted per year
- Criminal background check required (see page 73).
- One year (two semesters) Medical Assisting Certificate of Proficiency available.
- Non-native English applicants: TOEFL minimum iBT score of 25 required in speaking component, and minimum iBT score of 21 required in listening component, minimum iBT score of 23 in writing component, and minimum iBT score of 21 in reading component.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Identify, administer and document medications based on usage outcomes, side effects and according to the principles of the six rights.

2. Collect, process and test diagnostic specimens and document follow-up on results.

3. Apply current up-to-date quality control and safety principles in the workplace.

4. Skillfully perform and document routine clinical procedures according to office protocol.

5. Perform and document routine administrative procedures according to office protocol.

6. Effectively apply verbal, nonverbal and written communication principles and skills in the workplace.

MEDICAL ASSISTING (Continued)

7. Maintain ethical standards and confidentiality for patient privacy and practice integrity.

8. Demonstrate professional work ethics with efficient use of multitasking skills, technology, time management, self management and teamwork.

Suggested Semester Sequence

Summer Semester		Credits
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MATH-1060	Survey of Mathematics or higher	3
		6

First Semester		Credits
HTEC-1610	Introduction to Pharmacology	2
MA-1020	Medical Terminology I	3
MA-1321	Medical Office Laboratory Procedures	2
MA-132L	Medical Office Laboratory Procedures	1
MA-1401	Basic Clinical Medical Assisting	1
MA-140L	Basic Clinical Medical Assisting Lab.	1
MA-1503	Administrative Procedures for the Medical Office	2
MA-150L	Administrative Procedures Laboratory	1
		13

Second Semester		Credits
EMT-1310	Cardiopulmonary Resuscitation	1
MA-1110	Reimbursement for Physician Services	2
MA-2010	Medical Terminology II	2
MA-2412	Advanced Clinical Medical Assisting	2
MA-241L	Advanced Clinical Assisting Lab	1
MA-2860	Medical Assisting Practicum [C]	2
MA-2980	Medical Assisting Seminar	1
PHIL-2050	Bioethics … OR	3
PHIL-205H	Honors Bioethics	
		14

Third Semester		Credits
BIO-1050	Human Biology [1]	3
BIO-105L	Human Biology Laboratory[1]	1
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II	
HIM-1112	Physician Office Coding	4
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
		14

Fourth Semester		Credits
BADM-1300	Small Business Management	4
MLT-1300	Introduction to Blood Collection	3
MLT-1850	Medical Laboratory Practicum I	3
MLT-2970	Advanced Phlebotomy	1
PSY-1010	General Psychology … OR	3
PSY-101H	Honors General Psychology	
		14

	PROGRAM TOTAL	61

[C] = Capstone course.

[1]BIO-2331 & 2341 together will be accepted in place of BIO-1050 & 105L.

MEDICAL ASSISTING

Certificate of Proficiency

The Medical Assistant is a multi-skilled professional who assists the physician with the administrative and clinical aspects of patient care. The program includes courses in administrative, clinical and communication skills; ethical and legal standards of medical practice; and a "hands on" clinical practicum experience in the health care industry. The Medical Assisting Certificate program is two semesters in length for full time students. Graduates of the one-year program are eligible to take the National Certification Examination given by the American Association of Medical Assistants.

Degree: Graduates may transfer directly into the Medical Assisting Degree program.

The Cuyahoga Community College Medical Assisting Program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), on recommendation of the Curriculum Review Board of the American Association of Medical Assistants Endowment (AAMAE). Commission on Accreditation of Allied Health Education Programs: 1361 Park Street, Clearwater, FL 33756. 727.210.2350.

Program Manager - 216-987-4439

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center while meeting the following requirements:

- High School Diploma/GED
- Completion of ENG-1010 with a "C" grade or higher.
- Completion of MATH-1060 or higher with a "C" grade or higher.
- GPA required: 2.00 overall
- Demonstrate a typing speed of 40wpm on proficiency exam administered in the Nursing and Allied Health Career's Student Success Center (Metropolitan Campus), or a keyboarding course such as IT-1000 with a grade of "B" or higher, or AOS-1220 Speed Building for those students familiar with the keyboard but need to increase their speed.

Other Information:
- 20 students accepted per year
- Certificate of Proficiency is first year of AAS in Medical Assisting.
- Criminal background check required (see page 73).
- Non-native English applicants: TOEFL minimum iBT score of 25 required in speaking component, and minimum iBT score of 21 required in listening component, minimum iBT score of 23 in writing component, and minimum iBT score of 21 in reading component.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Identify, administer and document medications based on usage outcomes, side effects and according to the principles of the six rights.

MEDICAL ASSISTING (Continued)

2. Collect, process and test diagnostic specimens and document follow-up on results.

3. Apply current up-to-date quality control and safety principles in the workplace.

4. Skillfully perform and document routine clinical procedures according to office protocol.

5. Perform and document routine administrative procedures according to office protocol.

6. Effectively apply verbal, nonverbal and written communication principles and skills in the workplace.

7. Maintain ethical standards and confidentiality for patient privacy and practice integrity.

8. Demonstrate professional work ethics with efficient use of multitasking skills, technology, time management, self management and teamwork.

Suggested Semester Sequence

Summer Semester		Credits
MATH-1060	Survey of Mathematics or higher	3
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	_
		6

First Semester		Credits
BIO-1050	Human Biology [1]	3
BIO-105L	Human Biology Laboratory [1]	1
HTEC-1610	Introduction to Pharmacology	2
MA-1020	Medical Terminology I	3
MA-1321	Medical Office Laboratory Procedures	2
MA-132L	Medical Office Laboratory Procedures	1
MA-1401	Basic Clinical Medical Assisting	1
MA-140L	Basic Clinical Medical Assisting Lab.	1
MA-1503	Administrative Procedures for the Medical Office	2
MA-150L	Administrative Procedures Laboratory	1
		17

Second Semester		Credits
EMT-1310	Cardiopulmonary Resuscitation	1
MA-1110	Reimbursement for Physician Services	2
MA-2010	Medical Terminology II	2
MA-2412	Advanced Clinical Medical Assisting	2
MA-241L	Advanced Clinical Assisting Lab	1
MA-2860	Medical Assisting Practicum	2
MA-2980	Medical Assisting Seminar	1
PHIL-2050	Bioethics … OR	3
PHIL-205H	Honors Bioethics	_
		14
	PROGRAM TOTAL	37

[1]BIO-2331 & 2341 together will be accepted in place of BIO-1050 & 105L.

MEDICAL LABORATORY TECHNOLOGY

Associate of Applied Science degree in Medical Laboratory Technology

The Medical Laboratory Technician (or Clinical Laboratory Technician) works in a hospital, clinic, private or research laboratory performing a variety of diagnostic tests. The course of study includes mathematics, chemistry, anatomy and physiology, medical laboratory procedures, general education courses and one academic semester of clinical field experience. Graduates may be eligible to take national certification examinations like that offered by the American Society for Clinical Pathology (ASCP).

Program Manager: 216-987-4438

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center while meeting the following requirements:

- High School Diploma/GED
- Complete ENG-1010 or ENG-101H with "C" or higher.
- Complete MATH-1410 or higher with "C" or higher.
- Complete the following:
  -Completion of CHEM-1020, MLT-1000 & MA-1020
  -Eligibility to enroll in BIO-2331 by sufficient score on Biology placement test or CHEM-1010 and CHEM-1020 with "C" or higher.
- GPA required: 2.50 admissions requirements. 2.50 overall

Other Information:
- 15 students accepted per year
- All science and math courses must have been completed within seven years of application submission, and may only be repeated once to improve a grade. Applicants with bachelor's or higher degree in sciences may have seven year limit on science and math courses waived (contact program manager).
- Criminal background check required (see page 73).
- Non-native English applicants required to take and pass TOEFL with minimum scores of: Reading 21, Listening 22, Writing 23, and Speaking 24.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Organize workflow using technology to produce efficient, detail oriented work and identify emergencies and use problem solving skills to resolve these issues.

2. Follow governmental, accreditation, and institutional guidelines in relationship to safety, infection control, confidentiality, and proficiency testing.

3. Practice consistent quality assurance through precise performance, monitoring, analyzing, and documenting of all quality testing.

4. Collect samples; perform testing procedures according to SOP; operate, maintain, and trouble shoot instrumentation; and keep accurate records.

Program Sequences _____

MEDICAL LABORATORY TECHNOLOGY (Continued)

5. Interact with patients, staff and colleagues, using tact, courtesy, and respect.

6. Develop professionalism by adhering to institutional policies and practicing ethical standards as defined by accrediting boards.

Suggested Semester Sequence

Program Admissions Requirements Semester		Credits
CHEM-1020	Introduction to Organic Chemistry and Biochemistry [1]	4
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition	
MA-1020	Medical Terminology I	3
MATH-1410	Elementary Probability and Statistics I [2]	3
MLT-1000	Introduction to Medical Laboratory Technology	3
		16

First Semester		Credits
BIO-2331	Anatomy and Physiology I [3]	4
MLT-1351	Problem Solving Techniques for the Medical Laboratory	2
MLT-1491	Urinalysis and Body Fluids	3
MLT-2461	Hematology	3
PHIL-2050	Bioethics	3
		15

Second Semester		Credits
MLT-2501	Clinical Chemistry	5
MLT-2471	Immunohematology and Serology	5
BIO-2500	Microbiology	4
IT-1010	Introduction to Microcomputer Applications …OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
		17

Third Semester		Credits
MLT-2482	Clinical Microbiology	5
MLT-2990	Advanced MLT Applications [C]	6
BIO-2341	Anatomy and Physiology II	4
		15

Fourth Semester		Credits
SPCH-1000	Fundamentals of Interpersonal Communication	3
MLT-2940	Medical Laboratory Field Experience [C]	3
MLT-2980	Professional Development and Life Skills Seminar	1
		7
	PROGRAM TOTAL	70

[1] Enrollment in CHEM-1020 requires students to have either achieved a sufficient score on Chemistry Placement Test or completed CHEM-1010 with "C" or higher.

[2] Students who do not place into MATH-1410 on assessment test must take MATH-1270 as a prerequisite for this program. MATH-1800-1820 may not be used to meet this requirement.

[3] Enrollment in BIO-2331 requires either appropriate placement score on biology Placement test or a grade of "C" or higher in BIO-1100. BIO-233A and BIO-233B may be taken in place of BIO-2331.

[C] = Capstone course.

LABORATORY PHLEBOTOMY

Short-Term Certificate

The Laboratory Phlebotomy Short-Term Certificate is a skills-oriented program designed to educate and train persons to skillfully collect blood specimens in a variety of situations. The curriculum includes introduction to blood collection, special blood collecting techniques, medical terminology, medical ethics, asepsis, human biology, and an eight-week period of clinical hands-on experience in a hospital or medical clinic.

The skill of phlebotomy is part of the Medical Laboratory Technology (Clinical Laboratory Science) profession. Students can apply their technical credits in phlebotomy to the Associate Degree of Applied Science in Medical Laboratory Technology.

Program Admission Requirements:
- Rolling admissions. Program starts spring (classroom based daytime lecture/labs) and fall semesters (distance learning lecture/evening labs) of each year. Refer to program website for specific/additional scheduling:http://www.tri-c.edu/programs/healthcareers/Phlebotomy/Pages/default.aspx. Application may be submitted to the Health Career Enrollment Center while enrolled in final prerequisite courses.
- High School Diploma/GED
- Eligibility for ENG-1010.
- Eligibility for MATH-0960.
- Complete the following:
    MA-1020
    BIO-1050 (also accept BIO-1221, 2341 or 234A in place of BIO-1050)
    ESL (English as a Second Language) Students: completion of TOEFL test
- GPA required: 2.50 admissions requirements/core courses

Other Information:
- 24 students accepted per semester, contingent upon availability of clinical sites.
- All science and math courses must have been completed within seven years of application submission, and may only be repeated once to improve a grade. Applicants with bachelor's or higher degree in sciences may have seven year limit on science and math courses waived (contact program manager).
- Time limit on core courses prior to application: seven years.
- Criminal background check required (see page 73).
- English as a Second Language students will be required to take and pass the Test of English as a Foreign Language (TOEFL) with minimum scores of: Reading 21, Listening 22, Writing 23, and Speaking 24. Submit scores with Health Careers Application to the Health Careers Enrollment Center.

- Upon acceptance to the program and prior to placement at a clinical site, student must submit evidence of good health/physical exam, current immunization status, current health insurance, and current certification in CPR.

- Accepted candidates will be required to attend a program orientation after acceptance into the program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Demonstrate an understanding of the basic concepts of communications, personal and patient interaction, stress management, professional behavior, and the legal implications of this work environment.

2. Perform proper infection control techniques and safety measures to protect patient, co-workers and community.

3. Apply knowledge of the anatomy and physiology of body systems and anatomic terminology in order to relate major area of the clinical laboratory to general pathologic conditions associated with the body systems.

4. Demonstrate proper techniques using appropriate equipment to perform venipuncture and capillary puncture while maintaining quality assurance during and after specimen acquisition.

5. Meet eligibility requirements to sit for American Society for Clinical Pathology (ASCP) Board of Registry Examination or equivalent.

Suggested Semester Sequence

First Semester		Credits
BIO-1050	Human Biology [1]	3
MA-1020	Medical Terminology I	3
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
PHIL-2050	Bioethics …OR	3
PHIL-205H	Honors Bioethics	_
		12

Second Semester		Credits
MLT-1300	Introduction to Blood Collection[2]	3
MLT-1850	Medical Laboratory Practicum I [2]	3
MLT-2970	Advanced Phlebotomy [3]	1
		7

	PROGRAM TOTAL	19

[1]BIO-1221, BIO-2341, and BIO-234A will be accepted in place of BIO-1050.
[2]Consecutive eight week course.
[3]Completed second eight weeks with MLT-1850.

NUCLEAR MEDICINE
Associate of Applied Science degree in Nuclear Medicine

A Nuclear Medicine technologist is the health professional responsible for performing nuclear medicine examinations that assist the physician in the diagnosis and treatment of various diseases. The trained nuclear medicine technologist prepares and administers radiopharmaceuticals and performs patient imaging procedures using radiation detection devices. Technologists provide data analysis and patient information to the physician. The nuclear medicine technologist may be employed in hospitals, clinics, imaging centers, physician's offices, education, research and manufacturing. Graduates of the program maybe eligible for the American Registry of Radiologic Technologists (ARRT) examination for Nuclear Medicine and/or the Nuclear Medicine Technology Certification Board examination (NMTCB). The program is accredited by the Joint Review Committee on Educational programs in Nuclear Medicine Technology.

Program Manager: 216-987-5298

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center 216-987-4247, during the semester that all program admission requirements are expected to be met:

- High School Diploma/GED
- Complete all Program Admission Requirement courses or higher (listed in next column) with "C" or higher.
- All math and science courses must have been completed within the past seven years at the time the Nuclear Medicine application is submitted. Math and science courses completed over seven years prior to the date of application may not be used to meet admission requirements.
- 2.75 GPA must be maintained for nuclear medicine courses once admitted to the Nuclear Medicine Technology program.
- 2.50 overall GPA must be maintained while waiting for entry into the first program major course.

Other Information:
- Approximately 15-18 students admitted - varies depending on space available at clinical facilities.
- Completion of the following: CHEM-1300/130L. Students with high school or previous chemistry coursework should take a chemistry placement test to qualify for CHEM-1300; students with no chemistry coursework will need to take CHEM-1010 before enrolling in CHEM-1300.
- PHYS-1050, the program will also accept PHYS-1210 in place of PHYS-1050 for those students intending on pursuing a Bachelor's degree.
- BIO-1221 or 2331 and 2341 (A&P I and II) may be used in place of BIO-1221.
- After formal admission to the program, but prior to beginning the first semester coursework, an applicant must show evidence of completion of two 8 hour clinical observations. Details of observation requirements will be provided with the acceptance letter mailed during summer session.
- Evidence of current certification in the Basic Life Support (CPR) Course for Health Care Providers (adult, child & infant) according to the American Heart Association standards or equivalency will be required prior to receiving <u>clinical</u> assignment.
- Candidates will be required to present evidence of good health verified by a physical examination prior to being granted permission to enter <u>clinical</u> training. Please refer to Health Requirements for Western Campus Health Career Students.
- Only one admission requirement course may be repeated only once to improve a grade below "C". A "W" is counted as an attempt.
- Completion of Test of English as a Foreign Language (TOEFL) is required of all international students or if English is spoken as a second language. A minimum iBT score of 24 is required in the speaking skill component and a minimum iBT score of 22 is required in the listening skill component a minimum iBT score of 21 in the reading component, and a minimum score of 23 in the writing component. More information about this test is at http://www.ets.org/.
- Criminal background check required (see page 73).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use effective verbal, non-verbal and written communication skills to provide comprehensive patient care in a healthcare team environment.

2. Prepare, record, administer and dispose of radioactive materials according to regulatory guidelines to ensure safety of patients, co-workers and the general public.

3. Demonstrate comprehensive patient care skills to provide safe, efficient and high quality nuclear medicine services.

4. Apply general science knowledge to demonstrate the proper and safe use of equipment and instrumentation for diagnostic and therapeutic applications within the scope of nuclear medicine practice.

5. Sit for Nuclear Medicine Technology Certification Board (NMTCB) and American Registry of Radiologic Technology [nuclear] (ARRT) and apply for state licensure.

Suggested Semester Sequence

Program Admissions Requirements Semester		Credits
BIO-1221	Anatomy and Physiology for Diagnostic Medical Imaging [1]	4
MATH-1521	College Algebra [2]… OR	4
MATH-152H	Honors College Algebra	4
CHEM-1300	General Chemistry I … AND	4
CHEM-130L	General Chemistry Laboratory I … OR	1
CHEM-130H	Honors General Chemistry I	5
PHYS-1050	Everyday Physics [3]	2
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	3
MA-1020	Medical Terminology I	3
		21

First Semester		Credits
NMED-1010	Nuclear Medicine Math and Statistics	1
NMED-1200	Radiation Safety & Biology	2
NMED-1301	Nuclear Medicine Procedures I	3
NMED-130L	Nuclear Medicine Laboratory I	1
NMED-1501	Radiation Physics	2
NMED-1602	Nuclear Radiopharmacy and Pharmacology	4
NMED-1701	Nuclear Medicine Instrumentation	3
		16

NUCLEAR MEDICINE (Continued)

Second Semester		Credits
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II … OR	
SPCH-1000	Fundamentals of Interpersonal Communication	
NMED-1100	Computers in Nuclear Medicine	1
NMED-1401	Patient Care for Nuclear Medicine	1
NMED-1770	Immunology and Pathophysiology for Sectional Imaging	2
NMED-1780	Sectional Anatomy for Advanced Molecular Imaging	2
NMED-2301	Nuclear Medicine Procedures II	3
NMED-230L	Nuclear Medicine Laboratory II	1
NMED-2600	Molecular and Fusion Imaging	2
NMED-2660	Nuclear Medicine Therapy	1
		16

Summer Semester		Credits
NMED-2700	Nuclear Medicine Research Methods	1
NMED-2940	Nuclear Medicine Field Experience I	3
PHIL-2050	Bioethics … OR	3
PHIL-205H	Honors Bioethics	
		7

Third Semester		Credits
NMED-2950	Nuclear Medicine Field Experience II	4
PSY-1010	General Psychology … OR	3
PSY-101H	Honors General Psychology	
		7

Fourth Semester		Credits
NMED-2960	Nuclear Medicine Field Experience III [C]	4
Arts & Hum/Soc & Beh Sci (see AAS Degree requirements)		2
		6

	PROGRAM TOTAL	73

[1]BIO-2331 & 2341 together will be accepted in place of BIO-1221.
[2]MATH-1800-1820 may not be used to meet this requirement.
[3]PHYS-1210 will be accepted in place of PHYS-1050.

[C] = Capstone course.

General Application Procedures:

Nursing (Associate of Applied Science Degree)
Nursing (Accelerated Track)
Nursing ACCESS in Nursing (LPN-RN Track)
Practical Nurse Program (Certificate of Proficiency)

Admission each year is limited to the number of openings in each program. Those students meeting all of the specific admission requirements will be provided with an application and admitted in the order in which completed applications are received.

Those who wish to apply for any of these programs must complete the following general procedures; additional requirements for each program are listed with the program sequence.

1. Submit a completed Application for Admission or Readmission to Cuyahoga Community College. Prior Tri-C students who have not been enrolled for three years or longer must submit an Application for Admission/ Readmission to Tri-C. Online admission at www.tri-c.edu.
2. Contact the high school from which you graduated or the agency that issued your GED and have them send an official transcript(s) directly to the Office of the Registrar, P. O. Box 5966, Cleveland, OH 44101-0966.
3. Contact all colleges/universities you have attended and have them send an official transcript directly to the Office of the Registrar at Tri-C. To ensure time for processing, the official transcript(s) should be received by the Office of the Registrar at least *four weeks prior to contacting the Nursing department.* Applicants who have attended institutions outside the U.S. must contact the Enrollment Center for special procedures. It is strongly recommended that all students schedule an appointment with an academic counselor at their campus of record.
4. Complete all required courses and meet the grade point average (GPA) requirements as specified in the program admissions requirements. If you have not earned college credit for an English or Math course through Tri-C, Advanced Placement, Credit for Prior Learning, or another college or university, you must take the English and Math assessment tests to determine your placement in these subjects. The semester English and Math courses listed on the program sequence pages are the minimum levels for eligibility.
5. In addition to academic requirements, successful completion of the Elsevier Admission Test (A2) is required in order to receive an application to the program.
6. Once all prerequisites have been completed, student may request a review online at http://www.tri-c.edu/programs/nursing, or via email at nursing@tri-c.edu. Potential applicants will receive written notification regarding eligibility for the program.
7. A background check (finger printing and court search) must be completed no sooner than months prior to the start of your program and no later than eight-weeks prior to the start of your program. Go to www.tri-c.edu/programs/nursing for additional information.

Any falsification of information provided in the application will automatically disqualify applicant for admission to a program.

All courses required for the Nursing programs MUST have a traditional letter grade, including the admissions requirements. The P/NP grading option will NOT be accepted by the Nursing programs.

Misdemeanors and Felonies: The Ohio Board of Nursing frequently receives calls from prospective students, school officials and the Bureau of Vocational Rehabilitation Services regarding whether the Board will permit a person who has a prior record of misdemeanors and/or felonies to sit for the licensure examination or become licensed. *The Board of Nursing has no statutory authority to advise as to whether an individual will be permitted to take the licensure examination or be able to be licensed until the individual actually applies to the Board for licensure by examination* (Ohio Board of Nursing [9/23/98]. Requirements for Section 5 of the Application for Licensure as a Nurse).

Felony Preclusion Bill: The Felony Preclusion Bill, signed by the Governor in April 2002, is an initiative to identify applicants for licensure with felony convictions. The Ohio Board of Nursing has the authority in this law to refuse to grant licensure to applicants with any of the felony convictions specified in the law. The egregious felonies listed in the bill include: aggravated murder, murder, voluntary manslaughter, felonious assault, kidnapping, rape, sexual battery, gross sexual imposition, aggravated arson, aggravated robbery, and aggravated burglary. **The law requires a criminal records check for new applicants for licensure.**

Required Criminal Background check (BCI): All students enrolled in Health Career and Nursing programs requiring off-campus clinical experiences are required to complete a background check that includes fingerprinting and a court search. Students returning to a Health Career program after one year of absence will need to complete another BCI. Students with a BCI record are not guaranteed acceptance into a clinical site, acceptance by their professional licensure/registration board, or employment in a health career field. *Due to the increased rise in patient identity theft, students with a convicted felony for forgery will not be accepted into a health career program.* Log onto www.tri-c.edu/nursing for further information. Reports from the background checks will be sent to the Dean of Nursing. Please be assured that this information will be kept confidential.

DEFINITION OF ELIGIBILITY: Eligibility for a specific course may be demonstrated by any of the following:
 a. Completion of Tri-C's placement test with a score appropriate for the specific course listed; OR
 b. Completion of the prerequisite for the course listed with a grade of "C" or higher (including equivalent courses transferred in from another college or university); OR
 c. Completion of the course listed with a grade of "C" or higher (including equivalent courses transferred in from another college or university).

QUARTER COURSES: Quarter courses may still be applied to meet degree requirements. Schedule an appointment with a counselor to determine eligible quarter courses for specific degree program

NURSING

Associate of Applied Science degree in Nursing

Upon successful completion of the associate degree nursing program requirements, graduates are eligible to take the National Council Licensure Examination for Registered Nurses. The curriculum is divided among nursing courses and non-nursing courses. The nursing courses consist of classroom activities and hospital experience caring for clients of all ages with a variety of health deviations.

Department of Nursing Education: 216-987-4067

Program Admission Requirements: Applications may be submitted to the Department of Nursing after completing the requirements listed below:

- High School Diploma/GED. High school transcript must be sent to Tri-C, Office of the Registrar, P.O. Box 5966, Cleveland, OH 44101.
- Complete ENG-1010 or ENG-101H with "C" or higher. Students who transfer credits for ENG-1020 with a grade of "C" or higher and do not have credit for ENG-1010 will have ENG-1010 waived, but the required 6 credit hours in Communication must be earned.
- Complete MATH-1250 or higher with "C" or higher**.
- Complete the following ("C" grade or higher in each): BIO-1100 or CHEM-1010 and 1020 PSY-1010 or PSY-101H
- GPA: 2.00 admissions requirements; 2.50 overall

Other Information:

- Comprehensive admissions information can be found at http://www.tri-c.edu/nursing.
- The Elsevier Admission Test (A2) is required after successfully completing core courses and an overall 2.50 GPA. Achieve a grade of 75% or higher in Math Skills and 75% or higher in English Language portion of the exam. Three separate tests compose the English Language portion of the exam. The three tests are: Reading Comprehension, Vocabulary, and Grammar.
- Once beginning the nursing course sequence, all nursing courses must be completed in four years.
- Day and evening classes admitted Fall and Spring. Space available basis.
- CHEM-1010 and CHEM-1020 replace BIO-1100 for students planning to transfer to a baccalaureate nursing program.
- Transfer students must meet all admission and progression requirements.
- Criminal background check required (see page 198.)

Program Outcomes: The standard degree, the Accelerated Track and LPN to RN track of the program in Nursing are designed to prepare students to demonstrate the following program outcomes:

1. Apply the nursing process in managing care for groups of individuals and families in a variety of health care settings.
2. Utilize information from multiple sources for managing safe, effective and quality nursing care for groups of individuals and families in a variety of healthcare settings.
3. Utilize critical thinking to apply evidence based practice when managing care for groups of individuals and families in a variety of health care settings.
4. Apply effective communication skills to establish and maintain therapeutic and professional relationships in managing care for groups of individuals and families in a variety of health care settings.
5. Integrate principles of human development when providing nursing care for groups of individuals and families across the life span.
6. Incorporate knowledge of cultural and socioeconomic factors in the management of nursing care for groups of individuals and families in a variety of health care settings.
7. Deliver, safe, competent and quality patient centered nursing care within the role of the Associate Degree Nurse as a:
   a. Provider of care: Integrate biopsychosocial and scientific principles when providing technically competent care for groups of individuals and families in a variety of health care settings.
   b. Manager of care:
      i. Collaborate as a member of the health care team to manage the care of groups of individuals and families in a variety of health care settings.
      ii. Delegate activities to manage the care of groups of individuals and families in a variety of health care settings.
   c. Member of the discipline of nursing:
      i. Practice within the ethical and legal framework of the nursing profession.
      ii. Formulate a plan for continuing professional development.
      iii. Identify resources for continuing professional development.

Suggested Semester Sequence

Program Admissions Requirements		Credits
BIO-1100	Introduction to Biological Chemistry [1]	3
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MATH-1250	Contemporary Mathematics or higher [2]	4
PSY-1010	General Psychology … OR	3
PSY-101H	Honors General Psychology	
		13

First Semester		Credits
BIO-2331	Anatomy and Physiology I [3]	4
NURS-1300	Health Assessment	2
NURS-1450	Self-Care Needs: Adult Life Span	8
PSY-2020	Life Span Development OR	4
PSY-202H	Honors Life Span Development	
		18

Second Semester		Credits
BIO-2341	Anatomy and Physiology II [3]	4
BIO-2500	Microbiology	4
NURS-1600	Health Deviations I	8
NURS-1701	Community/Home Nursing	1
		17

Third Semester		Credits
ENG-1020	College Composition II [4] … OR	3
ENG-102H	Honors College Composition II	
NURS-2300	Specialized Health Care Needs	9
		12

Fourth Semester		Credits
NURS-2400	Health Management C	1
NURS-2501	Health Deviations II	8
		9

| | PROGRAM TOTAL | 69 |

[1] CHEM-1010 and CHEM-1020 will be accepted in place of BIO-1100. Recommended for students planning to transfer to a BSN program.
[2] MATH-1800-1820 may not be used to meet this requirement.
[3] Modular courses BIO-233A and BIO-233B may be taken in place of BIO-2331. Modular courses BIO-234A & BIO-234B may be taken in place of BIO-2341.

NURSING (Continued)

[4]Students who transfer credits for ENG-1020 with a grade of "C" or higher and do not have credit for ENG-1010 will have ENG-1010 waived, but the required 6 credit hours in communication must be earned.

| C | = Capstone course.

Program accreditation is held through the Accreditation Commission for Education in Nursing (ACEN). For current information on the program status, please go to http://www.acenursing.us/accreditedprograms/programsearch.htm and search for Cuyahoga Community College.

Accrediting Commission for Education in Nursing, Inc. (ACEN)
3343 Peachtree Road NE, Suite 850
Atlanta, GA 30326
(404) 975-5000

NURSING ACCELERATED TRACK

Associate of Applied Science degree in Nursing (Accelerated Track)

Applicants with a bachelor's degree (or higher) from an accredited institution may qualify to enter in the Accelerated Track of the program and complete the program in four consecutive terms. These applicants must meet all nursing program admission requirements including the Entrance Examination and have completed prerequisite courses (see admission requirements).

Program Admission Requirements:
- Admission requirements for the Accelerated Track must be completed by the end of the Fall Semester to be considered eligible for admission into the following Fall Semester.
- Application may be submitted after meeting requirements listed below. Comprehensive admissions information is available at the Nursing website: http://www.tri-c.edu/programs/nursing/Pages/default.aspx.
- Submit all official college transcripts verifying bachelor's degree to Office of the Registrar.
- Complete the program admission requirement courses (listed in next column) with "C" or higher. Students who transfer credits for ENG-1020 with a grade of "C" or higher and do not have credit for ENG-1010 will have ENG-1010 waived, but the required 6 credit hours in Communication must be earned.
- GPA required: 2.00 admissions requirements; 2.50 overall.
- Accelerated Track admitted Fall Semester, day section only, on a space available basis.
- Successful completion of entrance examination.

Other Information:
- The Elsevier Admission Test (A2) is required after successfully completing core courses and an overall 2.50 GPA. Achieve a grade of 75% or higher in Math Skills and 75% or higher in English Language portion of the exam. Three separate tests compose the English Language portion of the exam. The three tests are: Reading Comprehension, Vocabulary, and Grammar.
- Once beginning the nursing course sequence, all nursing courses must be completed in four years.
- CHEM-1010 and CHEM-1020 replace BIO-1100 for students planning to transfer to a baccalaureate nursing program.
- Transfer students must meet all admission and progression requirements.
- Criminal background check required (see page 198).

Suggested Semester Sequence

Program Admissions Requirements Semester			Credits
BIO-1100	Introduction to Biological Chemistry ...	OR	3
CHEM-1010	Introduction to Inorganic Chemistry ...	AND	4
CHEM-1020	Introduction to Organic Chemistry and Biochemistry [1]		4
BIO-2331	Anatomy and Physiology I [2]		4
BIO-2341	Anatomy and Physiology II [2]		4
BIO-2500	Microbiology		4
ENG-1010	College Composition I [3] ... OR		3
ENG-101H	Honors College Composition I		
MATH-1250	Contemporary Mathematics or higher [4]		4
PSY-1010	General Psychology ... OR		3
PSY-101H	Honors General Psychology		_
			25 - 30

First Semester		Credits
NURS-1300	Health Assessment	2
NURS-1450	Self-Care Needs: Adult Life Span	8
PSY-2020	Life Span Development ... OR	4
PSY-202H	Honors Life Span Development	_
		14

Second Semester		Credits
NURS-1600	Health Deviations I	8
NURS-1701	Community/Home Nursing	1
		9

Summer Semester		Credits
ENG-1020	College Composition II ... OR	3
ENG-102H	Honors College Composition II	
NURS-2300	Specialized Health Care Needs	9
		12

Third Semester		Credits
NURS-2400	Health Management	1
NURS-2501	Health Deviations II	8
		9
	PROGRAM TOTAL	69

[1]CHEM-1010 and CHEM-1020 will be accepted in place of BIO-1100. Recommended for students planning to transfer to a BSN program.
[2]BIO-233A and BIO-233B may be taken in place of BIO-2331.
[2]BIO-234A and BIO-234B may be taken in place of BIO-2341.
[3]Students who transfer credits for ENG-1020 with a grade of "C" or higher and do not have credit for ENG-1010 will have ENG-1010 waived, but the required 6 credit hours in communication must be earned.
[4]MATH-1800-1820 may not be used to meet this requirement.

Transfer credits may be used to meet program admission requirements as appropriate.

| C | = Capstone course.

Program accreditation is held through the Accreditation Commission for Education in Nursing (ACEN). For current information on the program status, please go to http://www.acenursing.us/accreditedprograms/programsearch.htm and search for Cuyahoga Community College.

Accrediting Commission for Education in Nursing, Inc. (ACEN)
3343 Peachtree Road NE, Suite 850
Atlanta, GA 30326
(404) 975-5000

A Post-Degree Professional Certificate in Legal Nurse Consultant is also available through the Paralegal Studies program (see page 208).

NURSING (ACCESS LPN TO RN TRACK)

Associate of Applied Science degree in Nursing (ACCESS LPN to RN Track)

Upon successful completion of the associate degree nursing program requirements, graduates are eligible to take the National Council Licensure Examination for Registered Nurses. The curriculum is divided among nursing courses and non-nursing courses. The nursing courses consist of classroom activities and hospital experience caring for clients of all ages with a variety of health deviations.

Note: This program admits students in the Spring Semester and it is a modified evening program

Program Admission Requirements: Applications may be submitted to the Department of Nursing after completing the requirements listed below:

- Students who seek admission to the LPN to RN track must meet all Nursing Program admission requirements and must have the following credentials for enrollment in NURS-160A and NURSE 160D:
  1. Licensed in Ohio without restriction
  2. Graduated from an approved Practical Nursing Education Program
  3. Achieved a grade of "C" or better in each Practical Nursing Courses completed.
  4. Credentialed to administer medication by the Ohio Board of Nursing (OBN)
  5. Official LPN transcript
  6. One year – minimum of clinical nursing experiences as an L.P.N.
- Application may be submitted after meeting requirements listed below.
- Complete the program admissions courses (listed in next column) with "C" or higher.
- High School Diploma/GED. High school transcript must be sent to Tri-C, Office of the Registrar, P.O. Box 5966, Cleveland, OH 44101.
- GPA: 2.50 overall.

Other Information:

- The Elsevier Admission Test (A2) is required after successfully completing core courses and an overall 2.50 GPA. Achieve a grade of 75% or higher in Math Skills and 75% or higher in English Language portion of the exam. Three separate tests compose the English Language portion of the exam. The three tests are: Reading Comprehension, Vocabulary, and Grammar.
- Once beginning the nursing course sequence, all nursing courses must be completed in four years.
- CHEM-1010 and CHEM-1020 replace BIO-1100 for students planning to transfer to a baccalaureate nursing program.
- Transfer students must meet all admission and progression requirements.
- Criminal background check required (see page 198).

Suggested Semester Sequence

Program Admissions Requirements Semester		Credits
BIO-1100	Introduction to Biological Chemistry [1]	3
ENG-1010	College Composition I [2] … OR	3
ENG-101H	Honors College Composition I	
MATH-1250	Contemporary Mathematics or higher [3]	4
PSY-1010	General Psychology … OR	3
PSY-101H	Honors General Psychology	
		13

First Semester		Credits
BIO-2331	Anatomy and Physiology I [4]	4
NURS-160A	Access to Registered Nursing [5,7]	3
NURS-160D	Health Deviations I for LPNs [6,8]	3
PSY-2020	Life Span Development … OR	4
PSY-202H	Honors Life Span Development	
		14

Summer Semester		Credits
BIO-2341	Anatomy and Physiology II	4
BIO-2500	Microbiology	4
		8

Second Semester		Credits
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II	
NURS-1701	Community/Home Nursing	1
NURS-2300	Specialized Health Care Needs	9
		13

Third Semester		Credits
NURS-2400	Health Management [C]	1
NURS-2501	Health Deviations II	8
		9

PROGRAM TOTAL	57

[1] CHEM-1010 and CHEM-1020 will be accepted in place of BIO-1100. Recommended for students planning to transfer to a BSN program.
[2] Students who transfer credits for ENG-1020 with a grade of "C" or higher and do not have credit for ENG-1010 will have ENG-1010 waived, but the required 6 credit hours in communication must be earned.
[3] MATH-1800 - 1820 may not be used to meet this requirement.
[4] Modular courses BIO-233A and BIO-233B may be taken in place of BIO-2331.
[5] NURS 160A is a bridge course that replaces NURS-1300, 1450, and 1600.
[6] LPNs accepted into the Cuyahoga Community College Nursing Program are required to take NURS-160D.
[7] After successful completion of NURS-160A & while enrolled in NURS-160D,students will be required to complete the Award of Comparable Credit: Assessment of Prior Learning form requesting By-Passed credit for NURS-1300, 1450 & 1600 (18 CR) or if eligible apply for transfer of credit for NURS-1300, 1450 & 1600 through the Career Technical Assurance Guide (CTAG) process. Awarded comparable or CTAG credit will not affect a student's GPA. Students must maintain term enrollment in order to receive credit.
[8] LPNs accepted into Cuyahoga Community College Nursing Program are required to take NURS-160D prior to progressing to NURS 2300. PSY-2020, BIO-2331, BIO-2341, & BIO-2500 must also be successfully completed with a grade of "C" or higher prior to enrolling in NURS-2300.

[C] = Capstone course.

Program accreditation is held through the Accreditation Commission for Education in Nursing (ACEN). For current information on the program status, please go to http://www.acenursing.us/accreditedprograms/programsearch.htm and search for Cuyahoga Community College.

Accrediting Commission for Education in Nursing, Inc. (ACEN)
3343 Peachtree Road NE, Suite 850
Atlanta, GA 30326
(404) 975-5000

PRACTICAL NURSING
Certificate of Proficiency

The Practical Nurse (under the direction of a physician, dentist, optometrist, podiatrist or registered nurse) works in a variety of settings including: clinics, home care, hospitals, long-term care facilities and physicians' offices. The curriculum consists of 41 semester credits, divided among nursing and non-nursing courses. The nursing courses consist of classroom activities, hospital and long-term care experiences caring for patients of all ages with a variety of health deviations. Upon successful completion of the program requirements, graduates are eligible to take the National Council Licensure Examination for Practical Nurses. ACCESS in Nursing is available for graduates.

Program Manager: 216-987-4067

Program Admission Requirements:
- High School Diploma/GED
- Eligibility for ENG-1010
- Eligibility for MATH-1141
- Seven years (see Other Information below) GPA required: 2.00 overall

Other Information:
- Day and modified evening classes admitted Fall only. Space available basis. Clinical experiences may be held during the day and/or modified evenings and weekends.
- The Entrance Exam is required for admission into the Practical Nursing program. In order to take the Entrance exam, the student must possess a High School diploma or GED, overall college GPA of 2.0, and eligible to register for MATH-1141 and ENG-1010. Applicants must achieve a grade of 70% or higher in Math Skills and 70% or higher in English Language portion of the exam. Three separate tests compose the English Language portion of the exam. The three tests are: Reading Comprehension, Vocabulary, and Grammar.
- CHEM-1010 and CHEM-1020 replace BIO-1100 for students planning to transfer credits (may be taken after admission to the program).
- BIO-2331 with grade of "C" or higher will be accepted in place of BIO-1050/105L for students admitted prior to Fall 2013. BIO-2331 and BIO-2341 together will be accepted in place of BIO-1050 and BIO-105L effective Fall 2011 (may be taken after admission to the program).
- Once Practical Nursing courses have begun, all other classes must be taken in program sequence.
- A grade of "C" or higher required for ENG-1010, MATH-1141, BIO-1100, BIO-1050/105L, PSY-1010 and PSY-2020.
- ACCESS in Nursing available for graduates of this certificate program.
- Criminal background check required (see page 198).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Collects, prioritizes, organizes and records patient information in an accurate and appropriate manner for continuity of patient care.

2. Integrate interpersonal skill concepts and professional behavior standards into the practice of Practical Nursing. The ability to utilize therapeutic communication skills effectively with members of the health care team, patients and families.

3. Apply the principles of medication administration, utilizing the nursing process to affect a positive and safe outcome. Also, utilize the nursing process while implementing scientific principles of nursing, consistently, to safely provide technical care.

4. Delegate and supervise within LPN scope of practice, unlicensed personnel in the performance of appropriate skills while adhering to facility policies and procedures.

5. Demonstrate a theory based practice when planning, implementing and evaluating the nursing care of individuals and groups across the lifespan, including end of life care.

6. Utilize critical thinking in a clinical environment, applying the nursing process to meet self-care and self care deficits across the life span. Including end-of-life care.

   A practical nurse should be able to use critical thinking skills to:
   - Assist RN with patient assessment
   - Prioritize patient care among patients
   - Recognize when a patient is in trouble and seek assistance
   - Delegate tasks within scope of practice

7. Effectively teach patients and families self–care to attain, maintain optimal level of wellness or to a dignified death in accordance with patient's wishes.

Suggested Semester Sequence

First Semester		Credits
BIO-1050	Human Biology [1]	3
BIO-105L	Human Biology Laboratory	1
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MATH-1141	Applied Algebra & Math Reasoning or higher	3
PNUR-1300	Introduction to Patient Care [2]	2
PNUR-1321	Nursing Management of Adults I	7
		19

Second Semester		Credits
BIO-1100	Introduction to Biological Chemistry [3]	3
PNUR-1330	Nursing Management of Adults II	8
PSY-1010	General Psychology …OR	3
PSY-101H	Honors General Psychology	_
		14

Third Semester		Credits
PNUR-1341	Lifespan Nursing for the Practical Nurse	4
PSY-2020	Life Span Development …OR	4
PSY-202H	Honors Life Span Development	_
		8

	PROGRAM TOTAL	41

[1]BIO-2331 and BIO-2341 together will be accepted in place of BIO-1050 and BIO-105L. BIO-2330 will be accepted for students admitted through Fall 2012. Students admitted starting Fall 2013 must take BIO-1050 and 105L or BIO-2331 and BIO-2341.
[2]STNA Certified students may be granted credit for this course upon successful completion of written and skills competency exams.
[3]CHEM-1010 and CHEM-1020 will be accepted in place of BIO-1100. Recommended for students planning to transfer to a BSN program.

OCCUPATIONAL THERAPY ASSISTANT TECHNOLOGY

Associate of Applied Science degree in Occupational Therapy Assistant Technology

Occupational therapy practitioners help people of all ages gain skills needed to take part in meaningful daily activities called occupations, to support participation in their environments, from dressing and feeding themselves, to work, school, play, leisure, and/or social participation.

This program is designed to prepare students to provide occupational therapy treatments and related tasks under the supervision of a Registered Occupational Therapist in a variety of delivery systems, including, but not limited to: acute care settings, long term care facilities, rehabilitation centers, school systems, mental health agencies and institutions, home health care agencies, pediatric centers, and private practices. They may also be employed as activity coordinators.

The program requires five full-time semesters of study. All OTA students must complete Level II Fieldwork within 18 months following completion of academic preparation. All academic and fieldwork requirements must be completed before the student will be eligible to sit for the National Certification Examination.

The graduates of this program receive an Associate of Applied Science degree in Occupational Therapy Assistant and are eligible to sit for the National Certification Examination for the Occupational Therapy Assistant administered by the National Board for Certification in Occupational Therapy, Inc. (NBCOT). Successful completion of this exam is required to apply for licensure by the Ohio Occupational Therapy, Physical Therapy and Athletic Trainers Board.

The OTAT program is fully accredited by The Accreditation Council for Occupational Therapy Education (ACOTE), c/o Accreditation Department, American Occupational Therapy Association (AOTA) located at 4720 Montgomery Lane, Suite 200, Bethesda, MD, 20814-3449. Telephone 301-652-2682. (Website: www.acoteonline.com)

The conviction of a felony may affect a graduate's ability to sit for the NBCOT certification examination or attain state licensure.

NBCOT offers an Early Determination Review to individuals who have been charged with or convicted of a felony. Further information regarding this issue can be obtained from NBCOT at 800 South Frederick Ave., Suite 200, Gaithersburg, MD 20877-4150. The phone number is 301-990-7979. (Website: www.nbcot.org)

Program Manager: 216-987-4498

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Complete ENG-1010 or ENG-101H with "C" or higher.
- Complete the following:
    BIO-2331 (or BIO-2330 or 233A & BIO-234A)
    MA-1020 Medical Terminology
    Sufficient score on Biology placement test or grade of "C" or higher in BIO-1100.
- GPA required: 3.0 admissions requirements, 2.50 overall
- 50 hours of documented volunteer experience under supervision of an occupational therapist or occupational therapist assistant. Prospective applicants have the option of taking the OTAT-1300 Occupational Therapy Principles (introductory course) in lieu of volunteer experience.

Other Information:
- 30 students accepted per year.
- All science courses must have been completed within ten years of application submission, and may only be repeated once to improve a grade.
- English and science courses may be repeated only one time to earn a grade of "C".
- Pass/No Pass grade options may not be used for prerequisite requirements.
- Paid work experience as a Rehab Aide/OT Aide will be considered in lieu of volunteer experience.
- Non-native English speaking applicants: Required TOEFL Scores: Reading – 21 Listening - 21, Writing - 23, and Speaking 25. (http://www.toefl.org). Arrangements and costs incurred for the TOEFL will be the responsibility of the student.
- Criminal background check required (see page 73).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Use knowledge of anatomy/physiology, human development and mental/physical conditions to the application of occupational therapy principles and safely administer effective treatment intervention to achieve expected outcomes as related to occupation.
2. Understand the distinct roles and responsibilities of the occupational therapist and occupational therapy assistant in the supervisory process.
3. Employ state licensure laws and regulations in all situations that include clinical & professional decision making.
4. Listen, speak, and contribute using interpersonal skills with clinical team members, clients, family and other relevant support persons within context of occupational therapy settings.
5. Use professional and appropriate medical terminology in all verbal, written, and electronic communication that is relevant to practitioners, family and clients in occupational therapy settings and follows guidelines and specific documentation formats required by state practice acts, practice settings, and other regulatory agencies.
6. Apply effective principles of time management, clinical reasoning, problem solving, safety awareness, and cultural sensitivity to clients and situations in occupational therapy settings.
7. Act professionally and ethically by upholding the ethical standards, values and attitudes of the occupational therapy profession.
8. Achieve entry-level competence by successfully completing academic and fieldwork education requirements and passing the certification examination.

OCCUPATIONAL THERAPY ASSISTANT TECHNOLOGY (Continued)

Suggested Semester Sequence

Summer Session		Credits
BIO-2331	Anatomy and Physiology I[1]	4
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MA-1020	Medical Terminology I	3
OTAT-1300	Occupational Therapy Principles	2
OTAT-1310	Task Analysis	2
		14

First Semester		Credits
MATH-1xxx	1000-level MATH course or higher	3
OTAT-1320	Fundamentals of Developmental Disabilities	2
OTAT-1330	Techniques in Developmental Disabilities	3
OTAT-1850	Practicum I	2
PTAT-1300	Functional Anatomy	4
PSY-1010	General Psychology[2] …OR	3
PSY-101H	Honors General Psychology	
		17

Second Semester		Credits
BIO-2341	Anatomy and Physiology II	4
OTAT-1420	Fundamentals of Psychosocial Dysfunction	2
OTAT-1430	Techniques in Psychosocial Dysfunction	3
OTAT-1860	Practicum II	2
OTAT-1980	Therapeutic Use of Self	2
PSY-2020	Life Span Development …OR	4
PSY-202H	Honors Life Span Development	
		17

Third Semester		Credits
OTAT-2320	Fundamentals of Physical Dysfunction	4
OTAT-2330	Techniques in Physical Disabilities	4
OTAT-2340	Occupational Therapy Issues [C]	3
OTAT-2860	Practicum III	2
PHIL-1000	Critical Thinking	3
		16

Fourth Semester		Credits
ENG-1020	College Composition II …OR	3
ENG-102H	Honors College Composition II	
OTAT-2940	Field Experience	3
		6
	PROGRAM TOTAL	70

[1]BIO-2330 and BIO-2340 together will be accepted in place of BIO-2331 and BIO-2341.

[C] = Capstone course.

OPTICAL TECHNOLOGY

Associate of Applied Science degree in Optical Technology

Dispensing opticians are those professionals who fit eyeglasses or contact lenses as prescribed by an Ophthalmologist or Optometrist. These professionals analyze prescriptions along with the patient's occupation and habits in order to make recommendations about lenses and spectacle frames. Licensed opticians may work in retail, laboratory, or private practice settings.

Program Manager: 216-987-4454

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Eligibility for ENG-1010 with "C" or higher
- Eligibility for MATH-1060 or higher with "C" or higher
- GPA required: 2.00 overall

Other Information:
- 14 students accepted per year
- Criminal background check required (see page 73).
- Certificate available
- Acceptance into a Tri-C Healthcare program with a BCI record does not guarantee a clinical site place, acceptance by the profession's licensure/registration board, or employment upon graduation.
- A student placed in ESL courses through the college's ESL Assessment procedure (at the college Assessment Center) will be required to take and pass the Test of English as a Foreign Language (TOEFL) with a minimum score in Reading 21, Listening 21, Writing 23 and Speaking 25.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally and in writing to clients, colleagues, and other professionals.

2. Design eyewear by combining accurate physiognomic measurements with knowledge of ocular anatomy, geometric optics and prescription analysis.

3. Demonstrate proficiency in the operation and function of equipment and tools used in the fabrication and verification of eyewear.

4. Perform all tasks associated with the fitting and dispensing of eyewear.

5. Apply knowledge of ocular physiology and of local, state and federal guidelines in order to maintain accurate medical records.

6. Work within the safety standards that govern opticianry.

7. Discuss Ohio and national statutes that govern opticianry.

8. Conduct him/herself in a professional manner at all times.

9. Sit for the National Opticianry Certification Examination and the Contact Lens Registry Examination.

OPTICAL TECHNOLOGY (Continued)

Suggested Semester Sequence

First Semester		Credits
BIO-1230	Anatomy and Physiology of the Eye	4
MATH-1060	Survey of Mathematics or higher	3
OPT-1310	Theoretical Optics I	2
OPT-1410	Mechanical Optics I	2
OPT-1510	Optical Dispensing I	3
OPT-1610	Contact Lens I	2
		16

Second Semester		Credits
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
OPT-1320	Theoretical Optics II	2
OPT-1420	Mechanical Optics II	2
OPT-1520	Optical Dispensing II	3
OPT-1620	Contact Lens II	3
PHYS-1300	Physics of Optical Materials	4
		17

Summer Semester		Credits
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
OPT-2500	Optical Business … OR	2-4
BADM-1300	Small Business Management	
PSY-1010	General Psychology … OR	3
PSY-101H	Honors General Psychology	
		8 - 10

Third Semester		Credits
OPT-1710	Introduction to Patient Care	3
OPT-2650	License Review Spectacle	1
OPT-2670	Optical Development	2
OPT-2940	Optical Field Experience I	2
OPT-2971	Optical Field Experience Seminar I	3
PHIL-2050	Bioethics … OR	3
PHIL-205H	Honors Bioethics	
		14

Fourth Semester		Credits
OPT-2660	License Review Contact Lens	1
OPT-2701	Refractometry	3
OPT-2750	Ophthalmic Third Party Insurance	1
OPT-2950	Optical Field Experience II	2
OPT-2981	Optical Field Experience Seminar II [C]	3
EMT-1310	Cardiopulmonary Resuscitation	1
Communication…(See AAS Degree requirements) [2]		3
		14

| | PROGRAM TOTAL | 69 - 71 |

[2]Highly recommend ENG-1020 College Composition II or ENG-2151 Technical Writing.

[C] = Capstone course.

OPTICAL TECHNOLOGY
Certificate of Proficiency

A student who receives a one-year certificate can work in a retail outlet, optical laboratory or a doctor's office. Other career paths can lead to related work as a sales representative for optical products. Note: In order to be eligible to take the State Board Exam for licensure, you must finish the Optical Technology degree program.

Degree: Students may apply credits toward the Optical Technology degree program.

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally, non-verbally and in writing with members of health care team in an appropriate, culturally sensitive, effective and capable manner.

2. Fabricate spectacle lenses in a finishing laboratory environment with the ability to perform the basic tasks associated with fitting and dispensing eyewear under the supervision of a licensed optician.

3. Analyze and interpret prescriptions in order to make appropriate eyewear recommendations.

4. Work within the safety standards that govern opticianry.

5. Conduct him/herself in a professional manner at all times.

Suggested Semester Sequence

First Semester		Credits
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
OPT-1310	Theoretical Optics I	2
OPT-1410	Mechanical Optics I	2
OPT-1510	Optical Dispensing I	3
OPT-1610	Contact Lens I	2
PSY-1010	General Psychology … OR	3
PSY-101H	Honors General Psychology	
		15

Second Semester		Credits
MATH-1060	Survey of Mathematics or higher	3
OPT-1320	Theoretical Optics II	2
OPT-1420	Mechanical Optics II	2
OPT-1520	Optical Dispensing II	3
OPT-1620	Contact Lens II	3
		13

Summer Session		Credits
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
OPT-2500	Optical Business[1]	2
PHYS-1300	Physics of Optical Materials	4
		9
	PROGRAM TOTAL	37

[1]BADM-1300 will be accepted in place of OPT-2500.

OPHTHALMIC MEDICAL ASSISTING
Short-Term Certificate

Ophthalmic Assistants are ophthalmic allied health professionals who perform procedures under the supervision of an Ophthalmologist. An Ophthalmic Assistant may be responsible for taking patient histories, providing patient services, administering diagnostic tests and maintenance of ophthalmic equipment. The Ophthalmic Medical Assisting program combines academic instruction and clinical experience under professional supervision.

Financial Assistance funds cannot be applied towards this program.

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Eligibility for ENG-1010.
- GPA required: 2.00

Other Information:
- 14 students accepted per year
- Criminal background check required (see page 73).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally, non-verbally and in writing with members of health care team in an appropriate, culturally sensitive, effective and capable manner.

2. Apply knowledge of office procedures within an ophthalmic practice.

3. Identify the structure, function, and pathology of the human eye in order to maintain accurate electronic patient records in accordance with local, state, and federal guidelines.

4. Conduct pre-assessment screenings and ocular preparations using appropriate equipment and tools.

5. Work within safety standards that govern ophthalmology.

6. Conduct him/herself in a professional manner at all times.

7. Sit for certification examination for Ophthalmic Assistants.

Suggested Semester Sequence

First Semester		Credits
EMT-1310	Cardiopulmonary Resuscitation	1
BIO-1230	Anatomy and Physiology of the Eye	4
OPT-1710	Introduction to Patient Care	3
		8

Second Semester		Credits
OPT-1720	Advanced Patient Care	3
OPT-1911	Ophthalmic Assisting Directed Practice	4
		6
	PROGRAM TOTAL	14

PARALEGAL STUDIES
Associate of Applied Business degree in Paralegal Studies

The program educates students to serve as paralegal professionals and work independently in the legal field under the supervision of attorneys. Students receive a general legal education with course work in law office technology, law office administration, and computer-assisted legal research. Graduates are prepared for careers in business, industry or in non-profit corporations that interface with the legal system. Typical employers include law firms, insurance companies, local, state and federal government, title companies, banks and corporations. Paralegals organize and manage work flow in law office settings, draft legal documents, research and draft legal memoranda, and prepare attorney billings. They conduct background checks, interview clients and pursue factual investigations for employers. Paralegals may prepare witnesses for depositions and for trial. They organize client files and generally maintain client relationships. Paralegals may serve as employer liaisons to business, the police, other attorneys, government officials and the courts. Paralegals cannot accept a case, set fees, give legal advice or represent a client in court. This is an American Bar Association approved program.

Program Manager: 216-987-5214

Program Admission Requirements: Contact Paralegal Studies Program manager for required program application form:

- High School Diploma/GED
- ENG-1010 or ENG-101H
- Complete the following:
  - PL-1000 with "B" or higher.
  - Personal narrative.
  - Assessment of college-level writing skills.
  - Assessment of critical thinking skills.
- GPA required: 2.75 in Paralegal courses, 2.50 overall.

Other Information:
- Submit all college/ university transcripts to Office of the Registrar.

Program Outcomes: The Associate of Applied Science degree and the Post-Degree Professional Certificate programs are designed to prepare students to demonstrate the following program outcomes:

1. Communicate appropriately and professionally verbally and in writing to diverse audiences while maintaining confidentiality.

2. Work as an effective member of the legal team in a variety of roles.

3. Act in accordance with the rules of professional conduct and paralegal ethical codes and company policies.

4. Organize, prioritize, schedule and track assignments and appointments to meet deadlines and ensure accurate billing.

5. Investigate, prepare, conduct and summarize party, witness and expert interviews to aid in case development.

6. Analyze fact patterns; identify issues; find, apply and properly cite law using a variety of resources.

7. Draft, format and proof accurate legal documents using current technology in accordance with applicable court rules.

8. Organize, categorize and maintain case information in preparation for litigation.

PARALEGAL STUDIES (Continued)

Suggested Semester Sequence

First Semester		Credits
ACCT-1020	Applied Accounting	3
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications [1] … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
MATH-1060	Survey of Mathematics or higher	3
PL-1000	Introduction to Paralegal Profession	2
POL-1010	American National Government … OR	3
POL-101H	Honors American National Government	
		17

Second Semester		Credits
ENG-1020	College Composition II …OR	3
ENG-102H	Honors College Composition II	
PL-1300	Civil Procedure	3
PL-1400	Basic Legal Research and Writing	3
PL-1501	Law Office Technology	2
ACCT-1310	Financial Accounting … OR	3-4
EHST-1310	Introduction to Environmental Law … OR	
MA-1020	Medical Terminology I	
		14 - 15

Third Semester		Credits
PL-2301	Torts and Evidence	4
PL-2440	Business Transactions	3
PL-xxxx	Any PL elective course	3
PHIL-1020	Introduction to Logic	3
POL-2100	Constitutional Law … OR	3
POL-1020	State and Local Government	
		16

Fourth Semester		Credits
PL-2420	Probate Law	3
PL-2460	Business Organizations	3
PL-2851	Paralegal Practicum [2]	1
PL-2990	Paralegal Capstone [C]	2
PL-2xxx	Any 2000-level PL elective course	3
PL-2400	Computer-Assisted Legal Research	3
		15

	PROGRAM TOTAL	62 - 63

[1]Credit-by-exam is available through the IT department to meet this requirement. Written departmental approval from the IT department required.
[2]Can be waived with documentation of equivalent experience. Minimum of 60 credits for the degree still required.

[C]= Capstone course.

PARALEGAL STUDIES
Post-Degree Professional Certificate

This certificate program is designed for students who already have an Associate or Bachelor's Degree. The program educates students to serve as paralegal professionals and work independently in the legal field under the supervision of attorneys. Students receive a general legal education with course work in law office technology, law office administration and computer-assisted legal research. Graduates are prepared for careers in business, industry or in non-profit corporations that interface with the legal system. Typical employers include law firms, insurance companies, local, state and federal government, title companies, banks and corporations. Paralegals organize and manage work flow in law office settings, draft legal documents, research and draft legal memoranda, and prepare attorney billings. They conduct background checks, interview clients and pursue factual investigations for employers. Paralegals may prepare witnesses for depositions and for trial. They organize client files and generally maintain client relationships. Paralegals may serve as employer liaisons to business, the police, other attorneys, government officials and the courts. Paralegals cannot accept a case, set fees, give legal advice, or represent a client in court. This is an American Bar Association approved program.

Program Manager: 216-987-5214

Program Admission Requirements:
- Application required – contact Paralegal Studies Program Manager.
- High School Diploma/GED required.
- Submit college transcripts to verify Associate or Bachelor's Degree.
- Complete the following:
  - PL-1000 with "B" or higher.
  - Personal narrative.
  - Assessment of college-level writing skills.
  - Assessment of thinking/reading skills.
  - Assessment of computer skills.
- GPA required: 2.75 in Paralegal courses, 2.50 overall

Other Information:
- Fall, Spring and Summer admission

Suggested Semester Sequence

First Semester		Credits
PL-1000	Introduction to Paralegal Profession	2
PL-1300	Civil Procedure	3
PL-1400	Basic Legal Research and Writing	3
PL-2440	Business Transactions	3
PL-xxxx	Any PL elective course	2 - 3
		13 - 14

Second Semester		Credits
PL-2301	Torts and Evidence	4
PL-2400	Computer Assisted Legal Research	3
PL-2420	Probate Law ……OR	3
PL-xxxx	Any PL elective course	3
PL-2460	Business Organizations	3
PL-2851	Paralegal Practicum [1]	1
PL-2990	Paralegal Capstone	2
		16

	PROGRAM TOTAL	29 - 30

[1]May be waived with documentation of comparable or equivalent experience.

LEGAL NURSE CONSULTANT

Post-Degree Professional Certificate

This program is designed for registered nurses at the associate, bachelor, or graduate degree level who wish to pursue careers in legal nurse consulting. The program educates students to serve as legal nurse consulting professionals and work in industries that require employees with specialized medical and legal knowledge. Students receive a general legal education with coursework in advanced medicolegal research, medical records review and analysis, and marketing and management for the legal nurse consultant. Graduates are prepared for careers in industries that interface with both medical and legal systems. Typical employers include personal injury law firms, insurance companies, local, state, and federal government, hospitals, consulting firms, and corporations. Many nurse consultants are self-employed and contract with law firms or other entities to apply medical/legal analysis to specific factual situations. Legal Nurse Consultants cannot accept legal cases, set legal fees, give legal advice, or represent a client in court. This is an American Bar Association approved program.

Program Manager: 216-987-5214

Program Admission Requirements:
- Application required – contact Paralegal Studies Program Manager.
- Submit all college transcripts verifying associate or bachelor's degree.
- Assessment of computer skills.
- Current R.N. license; equivalent of two years clinical work experience.
- Assessment of reading, thinking, and writing skills.
- GPA required: 2.75 in Paralegal courses; 2.50 overall.

Other Information:
- Fall, Spring and Summer admission

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate appropriately and professionally verbally and in writing to diverse audiences while maintaining confidentiality.

2. Work as an effective member of the legal team in a variety of roles.

3. Act in accordance with the rules of professional conduct and paralegal ethical codes and company policies.

4. Organize, prioritize, schedule and track assignments and appointments to meet deadlines and ensure accurate billing.

5. Investigate, prepare, conduct and summarize party, witness and expert interviews to aid in case development.

6. Analyze fact patterns; identify issues; find, apply and properly cite law using a variety of resources.

7. Draft, format and proof accurate legal documents using current technology in accordance with applicable court rules.

8. Organize, categorize and maintain case information in preparation for litigation.

9. Analyze and interpret medical information/records to identify breach in medical standard of care.

Suggested Semester Sequence

First Semester		Credits
IT-1010	Introduction to Microcomputer Applications [1]	3
PL-1300	Civil Procedure [2]	3
PL-2030	Legal Nurse Consulting	2
		8

Second Semester		Credits
PL-2330	Advanced Medicolegal Research	3
PL-1400	Basic Legal Research and Writing	3
		6

Summer Semester		Credits
PL-xxxx	Any PL elective course	3
		3

Third Semester		Credits
PL-2430	Medical Record Review and Analysis	4
PL-2301	Torts and Evidence	4
		8

	PROGRAM TOTAL	25

[1]Credit-by-exam is available through the IT department to meet this requirement.
[2]For students admitted into the Legal Nurse Consulting Program, PL-1000 is not required.

PHARMACY TECHNOLOGY

Associate of Applied Science degree in Pharmacy Technology

A pharmacy technician assists the pharmacist with the day-to-day activities in the pharmacy. Under the direction of a pharmacist, the pharmacy technician performs pharmacy-related functions with the goal of optimizing patients' pharmaceutical care and department operations. Pharmacy technician duties include, but need not be limited to: maintaining patient records; setting up packaging and labeling of medication dosages; filling and dispensing routine orders for stock supplies and patient care areas; maintaining inventory of drug supplies and preparing parenteral admixtures. Other duties may include dispensing, pricing, inventory control, typing, records maintenance, cash register work and operation of computer terminals and pharmacy automation devices. The program is designed to train the pharmacy technician to function in the pharmacy departments of hospitals or other institutions, clinics, retail stores, and managed care organizations. Graduates will be prepared to take the national Pharmacy Technician Certification Examination, recognized by many employers, and will hold a college degree that will contribute to professional advancement.

Program Manager: 216-987-2381

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED.
- Complete ENG-1010 or ENG-101H with "C" or higher.
- Eligibility for MATH-1141 (or completion of MATH-0960 or MATH-0980 with a "C" or higher).
- Complete BIO-1100 with "C" or higher. May substitute CHEM-1010 and CHEM-1020.
- GPA required: 2.00 admissions requirements; 2.00 overall.

PHARMACY TECHNOLOGY (Continued)

Other Information:
- Science and math courses must have been completed within the past seven years at the time of admission to the program and may be repeated only once to improve a grade.
- Interview with program manager encouraged.
- Criminal background check required (see page 73).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Assist the pharmacist in the preparation, dispensing, and consulting activities of pharmacy practice.

2. Apply principles of quality to daily pharmacy practice as it relates to effectiveness, accuracy, and compliance with established legal, professional and organizational standards while striving for continued personal development.

3. Use negotiation, verbal and written communication to meet the needs of diverse clients and function effectively as a member of the health care team.

4. Apply the principles of ethical and caring behavior in health care to all pharmacy practice settings while balancing obligations to one's self, relationships and work.

5. Recognize and explain the value of membership in professional organizations, certification, and on-going education as a basis for maintaining a strong work ethic and fostering a positive image for the practice of pharmacy.

6. Sit for Pharmacy Technician Certification exam.

Suggested Semester Sequence

Summer Semester		Credits
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
BIO-1100	Introduction to Biological Chemistry[1]	3
		6

First Semester		Credits
BIO-1050	Human Biology[2]	3
BIO-105L	Human Biology Laboratory[2]	1
MATH-1141	Applied Algebra and Mathematical Reasoning or higher	3
PHM-1300	Introduction to Pharmacy Practice	3
PHM-1350	Pharmacy Practice I	3
PHM-1450	Pharmacology and Therapeutic Principles I	3
		16

Second Semester		Credits
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
PHM-1360	Pharmacy Practice II	3
PHM-1460	Pharmacology and Therapeutic Principles II	3
PHM-1860	Pharmacy Technology Practicum I	3
Communication…(See AAS Degree requirements)		3
		15

Third Semester		Credits
BIO-2500	Microbiology	4
MA-1020	Medical Terminology I	3
PHM-2860	Pharmacy Technology Practicum II	3
PHM-2701	Current Topics in Pharmacy Practice [C]	4
		14

Fourth Semester		Credits
HLTH-1100	Personal Health Education	3
PHIL-2050	Bioethics …OR	3
PHIL-205H	Honors Bioethics	
PHM-2870	Pharmacy Technology Practicum III	3
PHM-2080	Pharmacy Technician Examination Review	1
		10

| | PROGRAM TOTAL | 61 |

[1]CHEM-1010 & CHEM-1020 together will be accepted in place of BIO-1100.
[2]BIO-2331 will be accepted in place of BIO-1050/105L.
[C]= Capstone course.

PHARMACY TECHNICIAN
Certificate of Proficiency

A pharmacy technician assists the pharmacist with the day-to-day activities and processes in the pharmacy. Under the direction of a pharmacist, the pharmacy technician performs pharmacy-related functions with the goal of optimizing patients' pharmaceutical care and department operations. Pharmacy technician duties include, but need not be limited to: maintaining patient records; setting up packaging and labeling of medication dosages; filling and dispensing routine orders for stock supplies and patient care areas; maintaining inventory of drug supplies and preparing parenteral admixtures. Other duties may include dispensing, pricing, inventory control, typing, records maintenance, cash register work and operation of computer terminals and pharmacy automation devices. The program is designed to train the pharmacy technician to function in the pharmacy departments of hospitals or other institutions, clinics, retail stores, and managed care organizations. The Pharmacy Technician program is fully accredited by the American Society of Health-System Pharmacists. Graduates will be prepared to take the national Pharmacy Technician Certification Examination, recognized by many employers. Degree: Students may apply credits toward the Pharmacy Technology degree program.

Program Manager: 216-987-2381

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Complete ENG-1010 or ENG-101H with "C" or higher or have earned credit in a higher level English course (minimum grade of C).
- Eligibility* for 1141 (or completion of MATH-0960 or MATH-0980 with a "C" or higher.)
- Complete BIO-1100 with "C" or higher. May substitute CHEM-1010 and CHEM-1020 or CHEM-101H and CHEM-102H.
- GPA required: 2.00 admission requirements; 2.00 overall.

PHARMACY TECHNICIAN (Continued)

Other Information:
- Science and math courses must have been completed within the past seven years at the time of admission to the program and may be repeated only once to improve a grade.
- Interview with program manager encouraged.
- Criminal background check required (see page 73).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Assist the pharmacist in the preparation, dispensing, and consulting activities of pharmacy practice.

2. Apply principles of quality to daily pharmacy practice as it relates to effectiveness, accuracy, and compliance with established legal, professional and organizational standards while striving for continued personal development.

3. Use negotiation, verbal and written communication to meet the needs of diverse clients and function effectively as a member of the health care team.

4. Apply the principles of ethical and caring behavior in health care to all pharmacy practice settings while balancing obligations to one's self, relationships and work.

5. Recognize and explain the value of membership in professional organizations, certification, and on-going education as a basis for maintaining a strong work ethic and fostering a positive image for the practice of pharmacy.

6. Sit for Pharmacy Technician Certification exam.

Suggested Semester Sequence

Summer Session		Credits
BIO-1100	Introduction to Biological Chemistry[1]	3
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
		6

First Semester		Credits
BIO-1050	Human Biology[2]	3
BIO-105L	Human Biology Laboratory[2]	1
MATH-1141	Applied Algebra and Mathematical Reasoning or higher	3
PHM-1300	Introduction to Pharmacy Practice	3
PHM-1350	Pharmacy Practice I	3
PHM-1450	Pharmacology and Therapeutic Principles I	3
		16

Second Semester		Credits
BIO-2500	Microbiology	4
PHM-1360	Pharmacy Practice II	3
PHM-1460	Pharmacology and Therapeutic Principles II	3
PHM-1860	Pharmacy Technology Practicum I	3
PHM-2080	Pharmacy Technician Examination Review	1
		14

| | PROGRAM TOTAL | 36 |

[1]CHEM-1010 & CHEM-1020 together will be accepted in place of BIO-1100.
[1]BIO-2331 or BIO-2330 will be accepted in place of BIO-1050/105L.

PHYSICAL THERAPIST ASSISTING TECHNOLOGY

Associate of Applied Science degree in Physical Therapist Assisting Technology

Physical therapy provides services to patients and clients of all ages who have impairments, functional limitations, disabilities or changes in physical function and health status resulting from injury, disease, or other causes. The physical therapist assistant works under the supervision of the licensed physical therapist to provide treatments in a variety of health care settings such as hospitals, extended care centers, school systems, ambulatory care centers, private practice and other centers where physical therapists are employed. Upon successful completion of the program, the student is eligible to take an exam to qualify for licensure in the state in which the graduate chooses to practice.

Program Manager: 216-987-4502

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Complete ENG-1010 or ENG-101H with "C" or higher.
- Eligibility for MATH-1280 or higher. MATH-1800/1820 and 2800/2820 will not meet this requirement.
- Complete the following with "C" grade or higher: BIO-2331, HTEC-1000, MA-1020

Other Information:
- 30 students accepted per year
- All science courses must have been completed within the past 10 years.
- Candidates must achieve a minimum of a 3.0 cumulative grade point average (GPA) based on a 4.0 scale for the following core courses (or transfer of comparable courses from another college or university). All admissions requirement courses must have a grade of "C" or better and eligibility for Math 1280, Advanced Intermediate Algebra (or higher level). Admissions requirement courses are ENG 1010, BIO 2331, HTEC-1000, and MA 1020. Program admissions courses can only be repeated once to improve a grade.
- An overall GPA of 2.7 must be achieved and be maintained. Only accredited college and university credits as listed http://www.tri-c.edu/welcome/transfer/Pages/TransferCredits.aspx will be accepted. Overall GPA is calculated based on all previous college coursework completed through the semester prior to the date of application.
- Completion of 40 hours of work or volunteering in a Physical Therapy Department under the supervision of a Physical Therapist or Physical Therapist Assistant. Volunteer hours must be documented.
- Eligibility for BIO-2331 (appropriate test score on Biology Placement Test or completion of BIO-1100 with "C" or higher.
- Criminal background check required (see page 73).

PHYSICAL THERAPIST ASSISTING TECHNOLOGY (Continued)

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Safely administer effective treatment interventions as defined by the Physical Therapist's plan of care, adjusting to the patient's physical, emotional, and cultural responses; instructs and educates the patient, family and/or caregivers in continued care and injury prevention.

2. Recognize and educate others regarding the role and scope of practice of the Physical Therapist Assistant in the implementation of the plan of care as established by the supervising Physical Therapist and communicate patient's status to the physical therapist.

3. Obtain pertinent data; recognize changes and/or responses of patient conditions and environmental hazards that jeopardize safety; modify intervention within the plan of care and takes appropriate action.

4. Act professionally and ethically according to the APTA Code of Ethics and Standard of Conduct including social responsibility, commitment to patients and consumer needs, lifelong learning, and the physical therapy profession.

5. Identify and document operational performance improvements and provide accurate and timely information for billing and reimbursement purposes.

6. Communicate verbally, non-verbally and in writing with members of health care team in an appropriate, culturally sensitive, effective and capable manner.

7. Complete thorough, accurate, logical, concise, timely and legible manual and electronic documentation that follows guidelines and specific documentation formats required by state practice acts, the practice setting, and other regulatory agencies.

8. Sit for licensure examination.

Suggested Semester Sequence

Summer Semester		Credits
BIO-2331	Anatomy and Physiology I	4
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
HTEC-1000	Introduction to Patient Care	1
MA-1020	Medical Terminology I	3
MATH-1280	Advanced Intermediate Algebra or higher [1]	5
		16

First Semester		Credits
BIO-2341	Anatomy and Physiology II	4
PHYS-1210	College Physics I	4
PTAT-1100	Introduction to Physical Therapist Assisting	2
PTAT-1300	Functional Anatomy	4
PTAT-1311	Fundamentals of Physical Therapy	2
PTAT-1320	Introduction to Therapeutic Exercise	2
		18

Second Semester		Credits
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II … OR	3
SPCH-1010	Fundamentals of Speech Communication … OR	3
SPCH-101H	Honors Fundamentals of Speech Communication	
PSY-1010	General Psychology … OR	3
PSY-101H	Honors General Psychology	
PTAT-1401	Clinical Pathophysiology	2
PTAT-1411	Physical Therapy Procedures	3
PTAT-1420	Therapeutic Exercise	3
PTAT-2940	Field Experience I	1
PTAT-2341	Psychosocial Issues in Physical Therapy	2
		17

Third Semester		Credits
HTEC-1120	Critical Thinking in Healthcare	1
HTEC-1610	Introduction to Pharmacology	2
PSY-2010	Child Growth and Development … OR	3
PSY-201H	Honors Child Growth and Development… OR	
PSY-2020	Life Span Development … OR	
PSY-202H	Honors Life Span Development	
PTAT-2301	Long Term Physical Therapy Rehabilitation Procedures	4
PTAT-2310	Pediatric Physical Therapy	2
PTAT-2200	Physical Therapy in Acute Care Setting	2
PTAT-2330	Geriatric Physical Therapy	2
		16 - 17

Fourth Semester		Credits
PTAT-2840	Clinical Practicum I [C] [2]	2
PTAT-2850	Clinical Practicum II [C] [2]	2
PTAT-2970	Practicum Seminar	1
		5

PROGRAM TOTAL	72 - 73

[1] MATH-1800-1819/2800-2819 & 1820/2820 may not be used to meet this requirement.
[2] Consecutive eight week courses.

[C] = Capstone course.

PHYSICIAN ASSISTANT

Post-Degree Professional Certificate

   The physician assistant works with the supervision of a licensed doctor of medicine or osteopathy and carries out many of the tasks previously performed only by physicians. These tasks include performing physical examinations, requesting and carrying out various laboratory and diagnostic tests, performing certain therapeutic procedures and providing patient education/counseling. The physician assistant, as part of the physician's team, will be able to provide patient care services in any health care setting, hospital, nursing home, office or clinic in which the physician functions professionally.

This certificate program is a dual admission program with Cleveland State University (CSU) which requires that students have completed a bachelor's degree program prior to program entry. Eligible students will be required to also apply for admission to the Masters of Science in Health Sciences program at CSU. The program will require that students be enrolled and take coursework simultaneously in the MSHS program at CSU. To be admitted to the program, the students must have taken courses in the following areas as part of the bachelor's program: General Chemistry +Lab, Organic Chemistry + lab, Microbiology (one semester), Anatomy and Physiology I, Anatomy and Physiology II, Elementary Probability/Statistics I, General Psychology (one semester) English Composition (one semester). Students who have not completed coursework in these areas as part of their bachelor's program, may complete these courses at Tri-C prior to applying for admission to the program.

Program Manager: 216-987-5423

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- Application is available online through the Central Application Service for Physician Assistants (CASPA): https://portal.caspaonline.org
- Applicants must possess a bachelor's degree prior to program entry. Submit all college transcripts verifying a bachelor's degree.
- Completion of all prerequisite coursework with a grade of "B" or better.
- Patient care work or volunteer experience is preferred, but not required.
- Complete ENG-1010 or ENG-101H (or equivalent transfer course)
- Complete MATH-1410 Elementary Probability and Statistics I (or equivalent transfer course)
- Complete the following:
   BIO-1500 (or equivalent transfer course with lab)
   BIO-1510 (or equivalent transfer course with lab)
   BIO-2331 (or 2330) and (or equivalent transfer course with lab)
   BIO-2341 (or 2340) (or equivalent transfer course with lab)
   BIO-2500 (or equivalent transfer course with lab)
   CHEM-1300 &130L (or equivalent transfer course with lab)
   CHEM-1310 & 131L (or equivalent transfer course with lab)
   CHEM-2300 or CHEM-1020 (or equivalent transfer course with lab)
   PSY-1010 or PSY-101H (or equivalent transfer course)
   ENG-1020 or ENG-102H (or equivalent transfer course)
   MA-1020 (or equivalent transfer course)

   See program website for most current information about prerequisite coursework: http://www.tri-c.edu/programs/PhysicianAssistant
- 10 year time limit on Science courses prior to matriculation
- GPA required: 3.00 overall. Completion of all prerequisite coursework with a grade of "B" or better

Other Information:
- Up to 50 students accepted per year.
- Completion of an application to Cuyahoga Community College and completion of a graduate application to be submitted to Cleveland State University upon notification of program acceptance.
- All students enrolled in Health Career and Nursing programs requiring off-campus clinical experiences are required to complete a background check that includes fingerprinting and a court search. Reports from the background checks will be sent to the Associate Deans of Health Careers at the campus of their program or the Assistant Dean of Nursing. Please be assured that this information will be kept confidential.
- All students are required to maintain adequate health insurance throughout the program. Information regarding health insurance will be required upon program acceptance.
- Criminal background check required (see page 73).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Elicit a medical complete or problem specific history.
2. Perform a physical examination.
3. Develop a diagnostic plan.
4. Develop a therapeutic plan.
5. Provide education.
6. Document medical records.
7. Perform medical and surgical technical skills.
8. Utilize administrative and management skills.
9. Demonstrate professionalism.
10. Provide and expand professional education.

Suggested Semester Sequence

First Semester		Credits
PA-1200	History and Physical Exam Techniques I	3
PA-1240	Clinical Anatomy	4
PA-1550	The Physician Assistant Profession	1
PA-1590	Introduction to Clinical Medicine	2
Graduate MSHS coursework		4
Graduate MSHS coursework		3
		17

Second Semester		Credits
PA-1210	History and Physical Exam Techniques II	3
PA-1250	Clinical Pharmacology	4
PA-1360	Adjuncts to Diagnosis	3
PA-1600	Clinical Medicine I	4
Graduate MSHS coursework		4
Graduate MSHS coursework		3
		21

PHYSICIAN ASSISTANT (Continued)

Summer Semester		Credits
PA-1222	Basic Technical & Surgical Skills	2
PA-1350	Electrocardiography	1
PA-1620	Clinical Medicine III	4
Graduate MSHS coursework [1]		4
Graduate MSHS coursework		3
		14

Third Semester		Credits
PA-1232	Advanced Technical & Surgical Skills	2
PA-1370	Behavioral Medicine	2
PA-1610	Clinical Medicine II	4
PA-2302	Patient Management	2
PA-2501	Emergency Medicine	4
Graduate MSHS coursework		3
		17

Fourth Semester		Credits
PA-2611	Preparation for Practice	2
PA-2942	Field Experience I	4
PA-2972	Field Experience Seminar I	1
Graduate MSHS coursework		3
Graduate MSHS coursework		3
		13

Summer 2 Semester		Credits
PA-2952	Field Experience II	4
PA-2982	Field Experience Seminar II	1
Graduate MSHS coursework		3
		8

Fifth Semester		Credits
PA-2960	Field Experience III	2
Graduate MSHS coursework		3
		5

	PROGRAM TOTAL	95

[1]See Cleveland State University Graduate catalog for specific graduate course requirements.

PLANT SCIENCE AND LANDSCAPE TECHNOLOGY

Associate of Applied Science degree in Plant Science and Landscape Technology

This ornamental horticulture program prepares students for entry level to middle management positions in the Green Industry. Many opportunities exist for graduates in landscape design and construction, landscape maintenance, wholesale nursery and greenhouse plant production, garden center management, inside sales, arboriculture and urban forestry, theme parks, public horticulture, arboreta, and much more. The curriculum of this two-year, full-time program includes a summer field experience between the first and second years and is composed of a balance of classroom, laboratory and practical educational experiences. This program is Fully Accredited by the Professional Landcare Network, meeting the national standard for industry performance. Classes are available both day and evening, and students may enroll on either a full- or part-time basis.

Program Manager: 216-987-2235

Program Admission Requirements:
- High School Diploma/GED not required, but highly recommended
- Eligibility for ENG-1010 recommended
- Complete Math placement test

Other Information:
- Submit all college transcripts to Office of the Registrar.
- Certificate available in Landscape Technician.
- Garden Center Operations Concentration Available.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Ensure that a contract is properly executed by actively listening, understanding, and implementing instructions and effectively communicating them to other members of the team.

1a. Provide positive motivation to crew members by displaying an impeccable work ethic and providing positive reinforcement to instill ownership of the project/product.

2. Apply Green Industry Standards of quality, artisanship, and environmental responsibility to all aspects of work within the scope of the industry.

3. Identify and describe cultural conditions for over 500 different ornamental landscape plants commonly found in the industry including deciduous and evergreen trees and shrubs, herbaceous perennials, and annuals.

4. Use knowledge of plants, soils, chemicals, fertilizers, and Integrated Pest Management, to identify, correct, or prevent plant disease, insect pest, and physiologic issues as part of an Integrated Plant Health Care Program and be prepared to pass the State of Ohio Pesticide Core exam.

5. Demonstrate ability to safely operate and perform preventative maintenance on hand tools as well as small and large power equipment found within the Green Industry as well as evaluate the best tool to safely accomplish each task with efficiency.

PLANT SCIENCE AND LANDSCAPE TECHNOLOGY (Continued)

6. Demonstrate effective oral and written communication skills to develop professional interpersonal relationships with suppliers, co-workers, and clients from diverse cultural backgrounds.

7. Effectively use math and the most recent technologies to create estimates for production of a product including labor and materials needed.

8. Sit, when eligible, for relevant industry certification exams including but not limited to Ohio Nursery and Landscape Association: Ohio Certified Landscape Technician and PLANET Landscape Industry Certified Technician.

Suggested Semester Sequence

First Semester		Credits
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
HLTH-1230	Standard First Aid and Personal Safety	1
MATH-1xxx	1000-level MATH course or higher	3
PST-1311	Deciduous Woody Landscape Plants	3
PST-1411	Equipment Operations and Safety	2
PST-1510	Landscape Contracting … OR (a)	3
PST-1330	Plant Propagation (b)	2
PST-1300	Horticultural Botany	3
		17 - 18

Second Semester		Credits
CHEM-1000	/PSCI-1020 Chemistry	3
CHEM-100L	/PSCI-102L Chemistry Lab	1
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	3
PST-1321	Evergreens, Groundcovers, and Herbaceous Landscape Plants	3
PST-1420	Landscape Practices	3
PST-1351	Plant Production (b) … OR	3
PST-1431	Graphics for Landscape Design and Construction (a)	2
		15 - 16

Summer Semester		Credits
PST-2950	Field Experience	3
		3

Third Semester		Credits
BADM-1300	Small Business Management	4
PHIL-1000	Critical Thinking	3
PST-2320	Plant Pest Diagnostics	4
PST-2370	Introduction to Turfgrass	2
PST-1441	Introduction to Landscape Design (a)… OR	3
PST-1400	Garden Center and Nursery Management (b)	
		16

Fourth Semester		Credits
PST-1600	Irrigation and Drainage	2
PST-2310	Soil Technology	3
PST-2380	Arboriculture	2
PST-2431	Planting Design (a) … OR	3
PST-1450	Landscape Design – CAD (a) … OR	3
PST-2450	Crop Cycles and Alternative Growing Methods … OR (b)	3
BADM-2290	Urban Agribusiness Management (b)	3
SPCH-1000	Fundamentals of Interpersonal Communication	3
		13

	PROGRAM TOTAL	64 - 66

OPTIONS

(a) Landscape Design/Build   Credits

This option stresses all areas of landscape contracting including landscape management, installation, hardscapes, and design. In the fourth semester, students can choose between PST-2431 or PST-1450 to complete the option.

PST 1431	Graphics for Landscape Design and Construction	2
PST 1441	Introduction to Landscape Design	3
PST 1450	Landscape Design - CAD …OR	3
PST 2431	Planting Design	3
PST 1510	Landscape Contracting	3

(b) Garden Center/Nursery Management   Credits

This option builds on basic landscape knowledge by stressing management of retail garden centers, wholesale nurseries, and crop production. In the fourth semester, students can choose between two Option courses listed below - PST-2450 or BADM-2290.

BADM 2290	Urban Agribusiness Management ….OR	3
PST 2450	Crop Cycles and Alternative Growing Methods	3
PST 1330	Plant Propagation	2
PST 1351	Plant Production	3
PST 1400	Garden Center and Nursery Management	3

C = Capstone course.

GARDEN CENTER

Short-Term Certificate

This two semester certificate program offers garden center management skills to persons who are seeking a career in retail garden center operations but who may not desire a full degree. The certificate is also helpful to those already employed in landscape or other green industries who have a desire to upgrade their knowledge and skills in order to be a more valuable staff member. The Plant Science and Garden Center Short-Term Certificate features course work in such horticulture basics as plant identification, and current landscape practices as well as essential business aspects of retailing in the green industry.

Degree: Students may apply credits earned toward the Plant Science and Landscape Technology degree program.

Program Manager: 216-987-2235

Program Admission Requirements:
- High School Diploma/GED not required, but highly recommended
- Complete English placement test
- Complete Math placement test

Other Information:
- Submit all college transcripts to Office of the Registrar.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply knowledge of deciduous, evergreen and herbaceous plants, their growing habits and needs to determine appropriate placement within the landscape.
2. Assist clients and customers with plant related problems and propose related solution(s).
3. Effectively communicate with customers, staff members, and managers and provide exceptional customer service.
4. Use merchandising and selling techniques within a retail atmosphere.
5. Analyze all aspects of financial management of garden center and create sound business plans and strategies.

Suggested Semester Sequence

First Semester		Credits
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
PST-1311	Deciduous Woody Landscape Plants	3
PST-1330	Plant Propagation	2
PST-1400	Garden Center and Nursery Management	3
		11

Second Semester		Credits
HLTH-1230	Standard First Aid and Personal Safety	1
PST-1321	Evergreens, Groundcovers, and Herbaceous Landscape Plants	3
PST-1351	Plant Production	3
PST-2320	Plant Pest Diagnostics	4
		11
	PROGRAM TOTAL	22

LANDSCAPE CONTRACTING

Short-Term Certificate

This two semester certificate program offers basic landscaping skills to persons who are seeking a career in landscape contracting but who may not desire a full degree. The certificate is also helpful to those already employed in the landscape industry who have a desire to upgrade their knowledge and skills in order to be a more valuable staff member. The Plant Science and Landscape Contracting Short-Term Certificate features course work in such horticulture basics as plant identification, equipment operations, and current landscape practices.

Degree: Students may apply credits earned toward the Plant Science and Landscape Technology degree program.

Program Manager: 216-987-2235

Program Admission Requirements:
- High School Diploma/GED not required, but highly recommended
- Complete English placement test
- Complete Math placement test

Other Information:
- Submit all college transcripts to Office of the Registrar.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Ensure that a contract is properly executed by actively listening, understanding, and implementing instructions and effectively communicating them to other members of the crew while providing positive motivation. Display an impeccable work ethic and provide positive reinforcement to instill ownership of the project.

2. Effectively maintain residential, commercial, industrial, multi-family, institutional, park and public properties lawn, bed and tree installations by properly weeding, deep edging, mulching, pruning, mowing, watering and fertilizing.

LANDSCAPE CONTRACTING (Continued)

3. Apply the green industry standards of quality through the practice of proper planting techniques and knowledge of landscape plants, weeds, and the culture and care of landscape plants.

4. Demonstrate safe operation and maintenance of small and large-engine equipment used in landscape installations and maintenance.

Suggested Semester Sequence

First Semester		Credits
HLTH-1230	Standard First Aid and Personal Safety	1
PST-1311	Deciduous Woody Landscape Plants	3
PST-1411	Equipment Operations and Safety	2
PST-1510	Landscape Contracting	3
		9

Second Semester		Credits
PST-1321	Evergreens, Groundcovers, and Herbaceous Landscape Plants	3
PST-1420	Landscape Practices	3
PST-1600	Irrigation and Drainage	2
PST-2370	Introduction to Turfgrass	2
		10
	PROGRAM TOTAL	19

LANDSCAPE DESIGN

Short-Term Certificate

This two semester certificate program offers basic to advanced landscape design skills to persons who are seeking a career in landscape design but who may not desire a full degree. The certificate is also helpful to those already employed in the landscape industry who have a desire to upgrade their knowledge and skills in order to be a more valuable staff member. The Plant Science and Landscape Design Short Term Certificate features course work in such horticulture basics as plant identification, landscape design, landscape project estimating and management and current landscape practices.

Degree: Students may apply credits earned toward the Plant Science and Landscape Technology degree program.

Program Manager: 216-987-2235

Program Admission Requirements:
- High School Diploma/GED not required, but highly recommended
- Complete English placement test
- Complete Math placement test

Other Information:
- Submit all college transcripts to Office of the Registrar.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Ensure that a landscape design is properly created by actively listening, understanding, and implementing instructions and effectively translating them to select and place appropriate plants and materials in a landscape setting.

2. Apply knowledge of deciduous, evergreen and herbaceous plants, their growing habits and needs, and appropriate placement within the landscape.

3. Demonstrate knowledge of landscape business requirements including estimating, profit and loss analysis, pricing strategies and customer relations.

Suggested Semester Sequence

First Semester		Credits
PST-1311	Deciduous Woody Landscape Plants	3
PST-1431	Graphics for Landscape Design and Construction	2
PST-1510	Landscape Contracting	3
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	_
		11

Second Semester		Credits
HLTH-1230	Standard First Aid and Personal Safety	1
PST-1321	Evergreens, Groundcovers, and Herbaceous Landscape Plants	3
PST-1441	Introduction to Landscape Design	3
PST-1450	Landscape Design - CAD	3
		10
	PROGRAM TOTAL	21

LANDSCAPE HORTICULTURE
Short-Term Certificate

  This two semester certificate program offers advanced horticultural skills to persons who are seeking a career in landscape horticulture but who may not desire a full degree. The certificate is also helpful to those already employed in the landscape or green industries who have a desire to upgrade their knowledge and skills in order to be a more valuable staff member. The Plant Science and Landscape Horticulture Short Term Certificate features course work in such horticulture topics as plant identification, plant pathology, soil technology, and arboriculture.

Degree: Students may apply credits earned toward the Plant Science and Landscape Technology degree program.

Program Manager: 216-987-2235

Program Admission Requirements:
- High School Diploma/GED not required, but highly recommended
- Complete English placement test
- Complete Math placement test

Other Information:
- Submit all college transcripts to Office of the Registrar.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply knowledge of deciduous, evergreen and herbaceous plants, their growing habits and needs to determine appropriate placement within the landscape.

2. Analyze plant micro-climates and the related effect on living organisms within them and prepare care and maintenance plans.

3. Demonstrate a knowledge of horticulture that can be transferred to interested segments of the population in a public setting, such as is found in botanical and public gardens.

Suggested Semester Sequence

First Semester		Credits
CHEM-1000	/PSCI-1020 Everyday Chemistry	3
HLTH-1230	Standard First Aid and Personal Safety	1
PST-1311	Deciduous Woody Landscape Plants	3
PST-1330	Plant Propagation	2
		9

Second Semester		Credits
PST-1321	Evergreens, Groundcovers, and Herbaceous Landscape Plants	3
PST-2310	Soil Technology	3
PST-2370	Introduction to Turfgrass	2
PST-2380	Arboriculture	2
		10
	PROGRAM TOTAL	19

PLANT SCIENCE AND LANDSCAPE TECHNOLOGY
(Landscape Technician)
Certificate of Proficiency

  The one-year certificate program offers basic landscaping skills to persons who are seeking a career in landscape contracting but who may not desire a full degree. The certificate is also helpful to those already employed in the landscape industry who have a desire to upgrade their knowledge and skills in order to be a more valuable employee. The Landscape Technician Certificate of Proficiency features course work in such horticulture basics as botany, plant identification, plant diseases and insect pests, soil technology and landscape practices.

Program Manager: 216-987-2235

Program Admission Requirements:
- High School Diploma/GED not required, but highly recommended.
- Eligibility for ENG-1010.
- Complete Math placement test.

Other Information:
- Submit all college transcripts to Office of the Registrar.

Degree: Students may apply credits earned toward the Plant Science and Landscape Technology degree program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Ensure that a contract is properly executed by actively listening, understanding, and implementing instructions and effectively communicating them to other members of the crew while providing positive motivation by displaying an impeccable work ethic and providing positive reinforcement to instill ownership of the project.

2. Effectively maintain residential, commercial, industrial, multi-family, institutional, park and public properties lawn, bed and tree installations by properly weeding, deep edging, mulching, pruning, mowing, watering and fertilizing.

3. Apply the green industry standards of quality through the practice of proper planting techniques and knowledge of landscape plants, weeds, and the culture and care of landscape plants.

4. Demonstrate <u>safe</u> operation and maintenance of small and large-engine equipment used in landscape installations and maintenance.

Suggested Semester Sequence

First Semester		Credits
ENG 1010	College Composition I …OR	3
ENG 101H	Honors College Composition I	
HLTH 1230	Standard First Aid and Personal Safety	1
MATH 1xxx	1000-level MATH course or higher	3
PST 1300	Horticultural Botany	3
PST 1311	Deciduous Woody Landscape Plants	3
PST 1411	Equipment Operations and Safety	2
		15

PLANT SCIENCE AND LANDSCAPE TECHNOLOGY (Continued)

Second Semester		Credits
BADM-1300	Small Business Management	4
PST 1321	Evergreens, Groundcovers, and Herbaceous Landscape Plants	3
PST 1420	Landscape Practices	3
PST 1510	Landscape Contracting	3
PST 1600	Irrigation and Drainage	2
		15
	PROGRAM TOTAL	30

PLANT SCIENCE AND LANDSCAPE TECHNOLOGY (Design/Build)

This program has been deleted effective Fall 2012. Students currently in the program have two years to complete this degree, until Summer 2014. After Summer 2014, degrees will no longer be granted for this program. Students currently in the program with questions regarding completing this degree or transitioning into another Plant Science and Landscape Technology program should make an appointment to see a counselor.

PLANT SCIENCE AND LANDSCAPE TECHNOLOGY
(Garden Center Operations)

This program has been deleted effective Fall 2012. Students currently in the program have two years to complete this degree, until Summer 2014. After Summer 2014, degrees will no longer be granted for this program. Students currently in the program with questions regarding completing this degree or transitioning into another Plant Science and Landscape Technology program should make an appointment to see a counselor.

POLYSOMNOGRAPHY (Sleep Disorders)
Certificate of Proficiency

A Polysomnographic technologist is a multi-skilled professional who works under the general supervision of a physician or designee to provide comprehensive evaluation and treatment of sleep disorders. The polysomnographic technologist records and analyzes the related data, reporting their technical findings to the physician to aid in rendering a medical decision. The learning concentration of the program is geared toward the specialties of sleep, medicine, respiratory, neurology and behavioral sciences. This program consists of on-campus didactic instruction and lab, as well as off-campus hands-on clinical application at our affiliated health care institutions.

Degree: Students may apply credits toward the Respiratory Care or Electroneurodiagnostic program, or meet with an academic counselor to determine if credits apply toward an Associate of Technical Studies degree.

Program Manager: 216-987-5654

Program Admission Requirements:
- High School Diploma/GED.
- Complete the following ("C" or higher in each):
    BIO-1100 or CHEM-1010 and 1020
    BIO-2331 (or BIO-2330)
- GPA required: 2.00 admission requirements; 2.00 overall.
- Clinical observation visits required (see details in application packet).

Other Information:
- 15 students accepted per year.
- Admissions requirements may be repeated only once to improve a grade below "C".
- Accepted applicants must attend a group information session prior to Fall Semester.
- Contact Program Manager, at 216-987-5654 for information or application packet.
- Criminal background check required (see page 73).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally with members of the health care team and patient's family members (or care takers when appropriate) according to established guidelines.

2. To be able to work independently, as well as a member of a health care team; to ensure proper test and patient safety.

3. Act professionally, according to the Board Registered Polysomnographic Technical Code of Conduct and established institutional guidelines.

4. Educate the patient on sleep and sleep disorders and explain the procedures and equipment that will be used during testing within scope of practice.

5. Apply knowledge of anatomy and physiology, neurophysiology, cardiopulmonary, sleep and basic math in order to observe, gather, analyze, and document physiological parameters before, during, and after a sleep procedure.

6. Set-up, calibrate, monitor, and trouble shoot hardware. Run sleep software to acquire accurate and artifact free data while maintaining safety.

7. Observe patients, data, and equipment to react appropriately and safely.

8. Explain general lab management procedures.

9. Meet the educational requirements for registry eligibility for the RPSGT exam.

Suggested Semester Sequence

Summer Session		Credits
BIO-1100	Introduction to Biological Chemistry[1]	3
BIO-2331	Anatomy and Physiology I[2]	4
MATH-1141	Applied Algebra & Mathematical Reasoning or higher	3
END-1310	Cardiopulmonary Physiology of Sleep	3
END-1410	Beginning Polysomnography	2
		15

POLYSOMNOGRAPHY (Continued)

First Semester		Credits
BIO-2341	Anatomy and Physiology II[2]	4
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
END-1421	Intermediate Polysomnography I	2
END-142L	Intermediate Polysomnography-I Lab	1
END-1934	Polysomnography Directed Practice-I	3
		13

Second Semester		Credits
END-1430	Intermediate Polysomnography-II	3
END-1440	Neurophysiology of Sleep	2
END-2934	Polysomnography Directed Practice-II	3
		8
	PROGRAM TOTAL	36

[1]CHEM-1010 and CHEM-1020 will be accepted in place of BIO-1100.
[2]BIO-2330 and BIO-2340 together will be accepted in place of BIO-2331 and BIO-2341.

PURCHASING AND SUPPLY MANAGEMENT

Associate of Applied Business degree in Purchasing and Supply Management

Purchases of materials, supplies and equipment represent a large part of a business or industrial firm's total cost of operation. Purchasing, because of its importance, is often designated as a separate responsibility to be handled by one or more individuals. Purchasing agents and their assistants are responsible for obtaining raw materials, goods and services at the lowest cost consistent with required quality. The majority of the nation's purchasing personnel are employed in service and manufacturing firms. Many also work in government agencies, public utilities, schools and hospitals.

Program Outcomes: The Associate of Applied Business Degree and the Post-Degree Professional Certificate program are designed to prepare students to demonstrate the following program outcomes:

1. Ability to work with a computer and operating systems, such as Windows and Microsoft Office (Word, Excel, PowerPoint, Access).

2. Apply an effective written and verbal communication strategy to meet the organization's objectives.

3. Effectively utilize personal management skills such as organization, leadership, professionalism, time management and ethics.

4. Apply general math skills to perform basic organizational ratios (return on investments, sales per employee, profit per employee, debt/equity) and understand measures and importance of positive returns.

5. Develop effective working relationships within a team or organization among diverse people.

6. Apply basic knowledge of business and economic principles and structures to achieve competitive advantage in a global marketplace in a socially responsible manner.

7. Collaborate on development of specification to purchase from the right source at the right time and right quality at the right price.

8. Monitor contract performance to ensure compliance with purchasing contractual obligations and determine need for further review and changes.

9. Source goods and services to meet the needs of the organization utilizing sound purchasing principles, supplier management techniques and code of ethics of the institute of supply management.

Suggested Semester Sequence

First Semester		Credits
BADM-1020	Introduction to Business	3
BADM-2160	Introduction to Purchasing	3
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
MATH-1250	Contemporary Mathematics or higher [1]	4
		16

Second Semester		Credits
ACCT-1310	Financial Accounting	4
BADM-2010	Business Communications … OR	3
BADM-201H	Honors Business Communications	
ECON-2620	Principles of Microeconomics	4
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II	
		14

Third Semester		Credits
ACCT-1340	Managerial Accounting	4
BADM-2110	Production/Operations Management	3
ECON-2610	Principles of Macroeconomics	4
MARK-2010	Principles of Marketing	3
		14

Fourth Semester		Credits
BADM-2120	Logistics Management	3
BADM-2150	Business Law	4
BADM-2180	Purchasing Management [C]	3
BADM-2240	Negotiations	3
PHIL-2060	Business Ethics [2]	3
		16
	PROGRAM TOTAL	60

[1]MATH-1800-1820 may not be used to meet this requirement; MATH-1270 or higher recommended for students planning to transfer.
[2]PHIL-2020 Ethics will be accepted in place of PHIL-2060.
[C] = Capstone course.

PURCHASING AND SUPPLY MANAGEMENT

Post-Degree Professional Certificate

   This certificate program is designed for students who already have an associate or bachelor's degree. The program presents students with the theoretical background needed to function in today's dynamic supply environment. Students receive a general supply chain management education with course work in purchasing, logistics, production/operations management, negotiating, freight management, accounting and business law. Graduates are better prepared for careers in business and industry that deal with the issues of supply chain management. Courses included in this program serve as the foundation of study for the four modules leading to the A.P.P. and C.P.M. designation. Typical students considering this course of study are employed in or seeking employment in areas of business in manufacturing or service that deal with the supply management process.

Suggested Semester Sequence

First Semester		Credits
ACCT-1310	Financial Accounting	4
BADM-1020	Introduction to Business	3
BADM-2160	Introduction to Purchasing	3
BADM-2120	Logistics Management	3
ECON-2620	Principles of Microeconomics	4
		17

Second Semester		Credits
BADM-2110	Production/Operations Management	3
BADM-2180	Purchasing Management	3
BADM-2240	Negotiations	3
BADM-2600	Introduction to World Trade	3
MARK-2010	Principles of Marketing	3
ACCT-xxxx	ACCT Program Elective [1]….OR	
BADM-xxxx	BADM Program Elective [1]….OR	
MARK-xxxx	MARK Program Elective [1]	3 - 4
		18 - 19
	PROGRAM TOTAL	35 - 36

[1]ELECTIVES

		Credits
ACCT-1340	Managerial Accounting	4
BADM-2150	Business Law	4
BADM-2510	Import/Export Documentation	1
BADM-2520	Operational Issues in International Business	2
BADM-2530	International Sourcing and Logistics	2
BADM-2620	International Trade Finance and Insurance	2
BADM-2630	Legal Issues in International Business	1
BADM-2730	Channels of Distribution in International Markets	1
MARK-2020	Principles of Salesmanship	3

RADIOGRAPHY

Associate of Applied Science degree in Radiography

   The Associate of Applied Science degree in Radiography prepares the student for an entry-level position as a radiographer, or radiologic technologist, in hospitals and other health care agencies. The radiographer administers radiation in the form of x-rays to create diagnostic images that aid the physician in the diagnosis and treatment of injury and disease. Responsibilities of the radiographer include adjusting equipment to the correct settings for each radiographic procedure, positioning the patient, manipulating equipment for proper imaging, and providing radiation protection. The radiographer understands radiation and knows how to produce high quality diagnostic examinations safely. The radiographer must apply knowledge of physics, anatomy and physiology, patient care and other related radiographic principles. Individuals interested in a career as a radiographer need a strong science and math background and possess a genuine interest in providing direct patient care with professionalism, compassion and a high degree of accuracy. The curriculum consists of on-campus didactic and lab instruction, as well as off-campus clinical rotations at affiliated health care institutions. Graduates of the program are eligible for the American Registry of Radiologic Technologists Certification Examination. The Radiography Program is accredited by: The Joint Review Committee on Education in Radiologic Technology, 20 N. Wacker Dr., Suite 2850, Chicago, IL 60606-3182. 312-704-5300. www.jrcert.org.

Program Manager: 216-987-5264

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Complete all Program Admission Requirement courses (listed in semester sequence) with "C" or higher.
- GPA required: 2.5 admissions requirements, 2.0 overall.

Other Information:
- 45-55 students accepted per year.
- MATH-1270 is a program admission requirement effective Fall 2013 semester. MATH-1200 will be accepted as a substitute for MATH-1270 for students who completed the math requirement prior to the Fall 2013 semester.
- There is no time limit on program admission requirement courses. However, applicants are advised that they will be held accountable for the content of those courses when they begin the Radiography Program. Students are strongly advised to review math and skeletal anatomy prior to beginning the program.
- Mandatory Radiography Program Information Session. Students **beginning the program in the fall 2015 semester and later** will be required to attend a Radiography Program Information Session prior to entering the program. Attendance at an information session does NOT need to be completed prior to applying but must be completed prior to program entry. Sessions are held once each semester and are posted on the program's webpage: www.tri-c.edu/radiography. Students are encouraged to bring a support person. Students must sign in to document their attendance and attend the entire session.

RADIOGRAPHY (Continued)

- Applicants are encouraged, but are not required, to obtain exposure to the healthcare environment prior to application to the program. This can be accomplished through volunteering or working at a healthcare facility. Radiography requires extensive, direct patient care and radiography students must be able to handle the physical, emotional, and psychological demands of this type of work.
- Criminal background check required (see page 73).
- BIO-2200 and PHYS-2250 are considered radiography program courses and must be taken after program acceptance and along with the RADT courses listed in the Program Sequence. They cannot be completed while a student is waiting to start the program.
- A background check which includes fingerprinting and a court search will be required prior to final program admission. The results of the background check may prevent a student from being admitted into a healthcare program. The College's determination of acceptable background check results for the purposes of acceptance into the educational program does not guarantee a similar determination by other entities (i.e. clinical affiliates, future employers, and/or professional certifying organizations [i.e. American Registry of Radiologic Technologists]).
- Documentation of good health, immunizations and CPR certification is required prior to clinical assignment. Students accepted into the program will be notified by the program when they should begin collecting and submitting this documentation. Students will be dismissed from the program if significant limiting health conditions are present which prevent the student from performing the normal functions of a radiography student and/or constitute a hazard to the health or safety of patients.
- Students in the radiography program must achieve a grade of "C" or better in all RADT courses as well as BIO 2200 and PHYS 2250 in order to remain in good academic standing and progress through the program.
- Courses used as prerequisites, core courses, as well as all radiography specialty courses, MUST have a traditional letter grade. The Pass/No Pass (P/NP) grading option for prerequisites, core and specialty courses will NOT be accepted to meet program graduation requirements.
- Non-native speakers of English are required to have completed the TOEFL (www.ets.org) with a minimum internet-based test score (iBT) of 24 required in the speaking component and a minimum iBT score of 22 in the listening component. This requirement is due to the program's professional technical standards for written and verbal communication skills. Preparation for the test is highly recommended. The college offers a preparation course for the TOEFL. Preparation for, scheduling of, and costs incurred for the TOEFL are the sole responsibility of the student.
- Applicants are STRONGLY encouraged to attend a Radiography Program Information Session. Session dates are posted on the radiography program webpage at www.tri-c.edu/radiography.
- Students who have completed program admission requirements and who are waiting to begin the program are encouraged to complete PHIL-2050 and the Associate of Applied Science communication requirement.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Operates radiographic equipment to produce quality images.
2. Practices patient care including radiation safety.
3. Performs diagnostic imaging procedures for a diverse population of patients.
4. Demonstrates the ability to make decisions and use independent judgement.
5. Performs computer skills essential to the function of a radiology department.
6. Displays effective verbal/written communication skills while providing patient care.
7. Provides patient/public education related to radiographic procedures and radiation protection.
8. Demonstrates professional ethical behavior as a radiographer.
9. Prepares to enter the profession as a Registered Radiographer committed to professional development.

Suggested Semester Sequence

Program Admissions Requirements Semester		Credits
BIO-1221	Anatomy and Physiology for Diagnostic Medical Imaging[1]	4
DMS-1351	Patient Care Skills	1
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MA-1020	Medical Terminology I	3
PSY-1010	General Psychology … OR	3
PSY-101H	Honors General Psychology	
MATH-1270	Intermediate Algebra [2]	4
		18

First Semester		Credits
BIO-2200	Radiobiology	2
RADT-1300	Fundamentals of Radiography	4
RADT-1400	Radiographic Positioning	3
		9

Second Semester		Credits
RADT-1911	Clinical Radiography I … OR	7
RADT-191S	Clinical Radiography I [3]	5
		5 - 7

Summer Semester		Credits
RADT-1350	Radiographic Technique	3
RADT-1410	Intermediate Radiographic Positioning	3
RADT-2400	Imaging Systems	3
Communication…(See AAS Degree requirements)		3
		12

Third Semester		Credits
RADT-2911	Clinical Radiography II … OR	7
RADT-291S	Clinical Radiography II [3]	
		7

RADIOGRAPHY (Continued)

Fourth Semester		Credits
PHIL-2050	Bioethics … OR	3
PHIL-205H	Honors Bioethics	
PHYS-2250	Radiographic Physics and Quality Control	4
RADT-2350	Radiographic Pathology	3
RADT-2361	Interventional Radiography and	2
	Pharmacology … OR	
RADT-xxxx	RADT elective course [4]	
		_
		12

Summer 2 Semester		Credits
RADT-2921	Clinical Radiography III [C] … OR	5
RADT-292S	Clinical Radiography III[3]	7
		5 - 7
	PROGRAM TOTAL	70

[1]BIO-2331 and BIO-2341 together will be accepted in place of BIO-1221.

[2]MATH-1270 or higher is a program admission requirement effective Fall 2013 semester. MATH-1200 will be accepted as a substitute for MATH-1270 for students who completed the math requirement prior to the Fall 2013 semester.

[3]Students beginning program in Fall Semester must take RADT-1911, 2911, 2921. Students beginning in Spring Semester must take RADT-191S, 291S, 292S. Students in the evening/weekend program must take either RADT-1911 (or modular courses RADT-191A and 191B depending on the college calendar), 291A, 291B, and 2921. RADT-191A and 191B are accepted in place of 1911; 291A & 291B are accepted in place of 2911.

[4]Elective course may be selected with approval from the Radiography Program.

[C] = Capstone course.

MAMMOGRAPHY

Short-Term Certificate

   The short-term certificate in Mammography provides an opportunity for radiologic technologists registered in radiography to obtain education and clinical training in mammography. The mammographer specializes in imaging the breast to aid in the diagnosis and treatment of breast disease. The curriculum consists of on-line instruction, as well as off-campus clinical rotations at affiliated health care institutions. Those successfully completing the short-term certificate will be eligible for advanced level certification in mammography through the American Registry of Radiologic Technologists (ARRT).

Financial Assistance funds cannot be applied towards this program.

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- Applications may be obtained from the Health Careers Enrollment Center.

- Applicant must be a registered radiographer in good standing, certified by the American Registry of Radiologic Technologies (ARRT) and possess a current radiographic license through the state of Ohio. Documentation of ARRT certification and Ohio radiographic licensure must be submitted with the Health Careers Application.

Other Information:

- 8-10 students accepted per year.
- Criminal background check required (see page 73).
- Acceptance into the mammography short-term certificate program is contingent upon the results of the required background check. The college's determination of acceptable background check results for the purposes of acceptance into the educational program does not guarantee a similar determination by other entities (i.e. clinical affiliates, future employers, and/or professional certifying organizations [i.e. American Registry of Radiologic Technologists]).
- Courses taken MUST have a traditional letter grade. The Pass/No Pass (P/NP) grading option will NOT be accepted to meet certificate completion requirements.
- Documentation of good health, immunizations and CPR certification is required prior to clinical assignment. Students accepted into the program will be notified by the program when they should begin collecting and submitting this documentation. Students will be dropped from the program if significant limiting health conditions are present which prevent the student from performing the normal functions of a mammography student and/or constitute a hazard to the health or safety of patients.
- Students in the mammography program must achieve a grade of "C" or better in all mammography coursework in order to remain in good academic standing and progress through the program.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Solicit and record patient's clinical history relevant to the examination including the documentation of anatomical characteristics.

2. Elicit patient cooperation and provide patient comfort, psychological support and education regarding the procedure and radiation safety.

3. Select and utilize equipment appropriate to the patient and examination to produce diagnostic images.

4. Select exposure factors specific to the patient and examination using appropriate markers to document breast(s) imaged and projections.

5. Position the patient to produce images specific to department protocol and physician's orders.

6. Evaluate the images to ensure proper identification and diagnostic quality.

7. Meet requirements for mammography certification eligibility through American Registry of Radiologic Technology.

MAMMOGRAPHY (Continued)

Suggested Semester Sequence

First Semester		Credits
RADT-2510	Fundamentals of Mammography … OR	1-4
RADT-251A	Introduction to Mammography … AND	
RADT-251B	Anatomy and Pathology of the Breast …AND	
RADT-251C	Positioning Techniques for Breast Imaging … AND	
RADT-251D	Physics of Mammography	4

Second Semester		Credits
RADT-2520	Advanced Procedures in Mammography… OR	1-4
RADT-252A	Sterile Technique and Interventional Procedures … AND	
RADT-252B	Ultrasound Breast Imaging and Registry Review … AND	
RADT-252C	Legal Issues and MQSA Guidelines … AND	
RADT-252D	Accreditation Process for Mammography	
RADT-2930	Mammography Applications	3
		7
	PROGRAM TOTAL	11

REAL ESTATE

This program has been deleted effective Fall 2012. Students currently in the program have two years to complete this degree, until Summer 2014. After Summer 2014, degrees will no longer be granted for this program. Students currently in the program with questions regarding completing this degree or transitioning into another program should make an appointment to see a counselor.

REAL ESTATE (Mortgage Finance)

This program has been deleted effective Fall 2012. Students currently in the program have two years to complete this degree, until Summer 2014. After Summer 2014, degrees will no longer be granted for this program. Students currently in the program with questions regarding completing this degree or transitioning into another program should make an appointment to see a counselor.

RECORDING ARTS AND TECHNOLOGY

Associate of Applied Science degree in Recording Arts and Technology

The recording arts and technology program trains students for entry-level positions within the audio industry. Students receive broad-based training in music recording and mixing, location sound, commercial production, audio for video and television, internet audio, record production and live sound reinforcement. A field experience/internship component provides on-the-job training at local and national facilities. Graduates are employed in a wide variety of positions within the audio recording services industry.

Program Manager: 216-987-4252

Program Admission Requirements:
- Application Required - contact RAT Department at 216-987-3277.
- High School Diploma/GED
- Eligibility for ENG-1010
- Eligibility for MATH-1xxx or higher

Other Information:
- GPA: 2.0 in program courses; 2.0 overall.
- Students interested in program or courses should contact the Recording Arts & Technology dept. at 216-987-3277.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate verbally and in writing with clients, colleagues, vendors, and other professionals both technically and creatively to successfully complete projects.

2. Work independently and as a member of a team.

3. Demonstrate high technical and ethical standards.

4. Manage self in order to complete a project on time and within budget.

5. Apply computer and problem solving skills to overcome obstacles and complete projects.

6. Design, install, and operate Live Sound reinforcement systems.

7. Demonstrate proficiency in audio recording and productions techniques.

8. Manage and present a project that meets professional standards.

Suggested Semester Sequence

First Semester		Credits
MUS-1130	MIDI Technology I	3
MUS-1230	Critical Listening	1
MUS-1200	Music Reading Skills	3
RAT-1300	Introduction to Recording	3
RAT-1310	Studio Operations	4
RAT-1320	Audio Transducers	3
		17

RECORDING ARTS AND TECHNOLOGY (Continued)

Second Semester		Credits
MATH-1xxx	1000-level MATH course or higher	3
RAT-1500	Recording Theory I	3
RAT-1511	Recording Lab I	2
RAT-1520	Audio Signal Processing	3
RAT-1530	Digital Audio Theory	3
RAT-2540	Live Sound Reinforcement	3
		17

Third Semester		Credits
EET-1130	Basic Audio Electronics	3
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MUS-1110	Music Business I	3
RAT-2300	Recording Theory II	3
RAT-2311	Recording Lab II	2
RAT-2330	Digital Audio Mixing	3
RAT-2341	Location Recording	2
		19

Fourth Semester		Credits
BADM-1050	Professional Success Strategy	3
ENG-2151	Technical Writing	3
MUS-1010	Survey of European Classical Music … OR	3
MUS-1020	Survey of Jazz … OR	
MUS-1030	Survey of Rock and Roll … OR	
MUS-1040	Survey of African-American Music … OR	
MUS-1050	Survey of World Music	
MUS-2140	Studio Maintenance	2
PSY-1010	General Psychology … OR	3
PSY-101H	Honors General Psychology	
RAT-2990	Recording Arts and Technology Capstone [C]	3
RAT-xxxx	Any RAT elective course	1
		18

Summer Session		Credits
RAT-2940	Audio Recording Field Experience	2
		2
	PROGRAM TOTAL	73

[C] = Capstone course.

RESPIRATORY CARE

Associate of Applied Science degree in Respiratory Care

Assess the cardiopulmonary system, assist in the treatment of cardiopulmonary impairment, evaluate treatment effectiveness and actively care for patients of all ages with deficiencies or abnormalities associated with the cardiopulmonary system. Opportunities exist for specialization within the profession in the areas of critical care, homecare, neonatal/pediatrics, education, pulmonary function testing and management as a licensed professional in respiratory care. The individual will, under the supervision of a physician, actively participate in the development of patient care plans, diagnostic testing and in the decision making process regarding the care and treatment of patients. Employment is primarily in hospitals but extends to home care, skilled nursing facilities, education and management. The respiratory care program, associate of applied science degree at the Western campus is accredited by the Commission on Accreditation for Respiratory Care (www.coarc.com) located at 1248 Harwood Road. Bedford, Texas. 76021-4244. 817- 283-2835.

Program Manager: 216-987-5267

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED.
- Complete ENG-1010 or ENG-101H with "C" or higher.
- Complete MATH-1141 or higher with "C" or higher**.
- Complete the following ("C" grade or higher in each):
  BIO-1100 or CHEM-1010 and 1020
  BIO-2331 (or BIO-2330)
- GPA required: 2.8 admissions requirements/core courses; 2.8 overall.
- Observation visit required (see details in application packet).

Other Information:

- 25 students accepted per year.
- Admissions/core courses may be repeated only once to improve a grade below "C".
- Accepted applicants must attend a group information session prior to Fall Semester.
- Criminal background check required (see page 73) prior to admission to the program. Contact the program manager for specific dates.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Demonstrate ethical and professional behavior.

2. Assess, evaluate, interpret and prioritize clinical, therapeutic and mechanical patient data to ensure appropriate outcomes.

3. Teach, document and communicate therapy with patients, families and all medical personnel, following medical protocols.

4. Employ personal safe work methods and practice Universal Precautions in clinical and non-clinical settings.

5. Perform procedures used to diagnose and treat cardiopulmonary patients for all age groups.

Suggested Semester Sequence

First Semester		Credits
BIO-1100	Introduction to Biological Chemistry [1]	3
BIO-2331	Anatomy and Physiology I [2]	4
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MATH-1141	Applied Algebra and Mathematical Reasoning or higher	3
PSY-1010	General Psychology … OR	3
PSY-101H	Honors General Psychology	
RESP-1300	Respiratory Care Equipment	4
RESP-1310	Cardiopulmonary Physiology	3
		23

RESPIRATORY CARE (Continued)

Second Semester		Credits
BIO-2341	Anatomy and Physiology II	4
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II	
RESP-1320	Acid-Base and Hemodynamics	2
RESP-1330	Cardiopulmonary Assessment and Pulmonary Diseases	5
RESP-1340	Pharmacology for Respiratory Care	2
		16

Summer Semester		Credits
PHIL-2050	Bioethics …OR	3
PHIL-205H	Honors Bioethics	
RESP-2210	Introduction to Mechanical Ventilation	1
RESP-2300	Basic Therapeutic Procedures	3
RESP-2910	Respiratory Care Directed Practice I	3
		10

Third Semester		Credits
BIO-2500	Microbiology	4
RESP-2310	Mechanical Ventilation	4
RESP-2320	Pediatric/Neonatal Respiratory Care	2
RESP-2920	Respiratory Care Directed Practice II	5
		15

Fourth Semester		Credits
RESP-2330	Respiratory Home Care/Rehabilitation	1
RESP-2341	Patient Management Problems	1
RESP-2930	Respiratory Care Directed Practice III [C]	5
		7
	PROGRAM TOTAL	71

[1]CHEM-1010 and 1020 will be accepted in place of BIO-1100.
[2]Requires sufficient score on Biology placement test to take this course in the same semester as BIO-1100.

[C] = Capstone course.

SPORT AND EXERCISE STUDIES

Associate of Applied Science degree in Sport and Exercise Studies

The Sport and Exercise Studies program is designed to prepare students for entry-level roles in Sport and Exercise Studies profession including: Fitness Specialist, Personal Trainer, Fitness Coordinator, Group Fitness Instructor, Specialty Instructor, and Sport Coach. The core curriculum includes Teaching Exercise Techniques, Advanced Training Concepts, Sport Injury Care, First Aid, CPR/AED, Fitness Management, Exercise Physiology, Kinesiology, Fitness and Wellness Coaching, Exercise Testing, Exercise Prescription and Program Design, technical electives, and practicum field experience. The program prepares students to take a variety of nationally recognized and accredited Personal Training and Group Fitness Instructor certifications.

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED equivalency/approved PSEOP student
- Eligibility for ENG-1010
- Eligibility for MATH-1060 or higher (MATH 1270 Intermediate Algebra or higher is highly recommended for students transferring to a four year college/university)
- PE-1000 or 1010 or verification of personal training certificate or previous exercise training experience.
- Verification of having completed a 4-8 hour observation where the candidate "shadows" a Fitness Professional in their work environment. See details in application packet.
- GPA required: 2.0 Admissions Requirement, 2.0 overall
- The following courses are recommended for students transferring to a four-year college/university: MATH-1270 or higher, BIO 1500, BIO 2331, BIO 2341
- The following courses are recommended for students not transferring to a four-year college/university: BIO-1050, BIO-105L, SES-2010.

Other Information:
- Criminal background check required (see page 73).
- Students with a BCI record are not guaranteed acceptance into the program, a practicum site, or employment in a health career field.
- Students may need to complete additional requirements depending on their chosen practicum site.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Demonstrate proficiency interpreting health status and risk stratification data and performing industry-standard fitness assessments and exercise tests.

2. Effectively demonstrate a variety of exercises and teach safe and correct use of exercise equipment and other exercise apparatus.

3. Effectively design, implement, supervise, and evaluate exercise prescriptions and exercise programs using assessment-based data and in accordance with client's needs, goals, and interests.

SPORT AND EXERCISE STUDIES (Continued)

4. Effectively educate, motivate and communicate healthy lifestyle behavior modifications.

5. Perform safe, ethical, and legal practices in a variety of health and fitness-related settings within the scope of practice.

6. Demonstrate organizational and administrative leadership by establishing program, business, risk management, budgetary and financial plans.

7. Demonstrate skill in designing, planning, marketing and administering effective fitness, recreational, sport, and wellness activities and programs.

8. Model principles of professional conduct and ethics according to industry standards.

Suggested Semester Sequence

First Semester		Credits
BIO-1050	Human Biology … AND	3
BIO-105L	Human Biology Laboratory … OR	1
BIO-1500	Principles of Biology I [1]	4
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
EMT-1310	Cardiopulmonary Resuscitation … OR	1
HLTH-1310	Cardiopulmonary Resuscitation … OR	
HLTH-1230	Standard First Aid and Personal Safety	
HLTH-1100	Personal Health Education	3
SES-1001	Introduction to Sport and Exercise Studies	2
SES-1040	Teaching Exercise Training Techniques	3
		16

Second Semester		Credits
BIO-2331	Anatomy and Physiology I [2] … OR	4
SES-2010	Exercise and Movement Anatomy	
MATH-1xxx	1000-level MATH course or higher	3
SES-1201	Fitness and Wellness Coaching	3
SES-2000	Essentials of Sports Injury Care	3
SES-2310	Advanced Training Concepts and Techniques	3
		15 - 16

Third Semester		Credits
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II … OR	3
SPCH-1000	Fundamentals of Interpersonal Communication … OR	3
SPCH-1010	Fundamentals of Speech Communication … OR	3
SPCH-101H	Honors Fundamentals of Speech Communication	3
BIO-2341	Anatomy and Physiology II … OR	4
SES-xxxx	Fitness and Exercise Studies elective	3
PSY-1010	General Psychology … OR	3
PSY-101H	Honors General Psychology	3
SES-2100	Sport and Exercise Physiology	3
SES-2210	Exercise Testing, Measurement, and Evaluation	3
		15 - 16

Fourth Semester		Credits
DIET-1200	Basic Nutrition	3
SES-2130	Kinesiology: Fundamentals of Human Movement	3
SES-2220	Exercise Prescription and Program Design	3
SES-xxxx	Fitness and Exercise Studies elective	3
SES-2840	Practicum: Sport and Exercise Studies [C]	2
		14

	PROGRAM TOTAL	60 - 62

ELECTIVES

Technical Electives		Credits

Select from the following courses to fulfill Sport and Exercise Studies elective:

SES 1100	Fundamentals of Fitness and Sport Management	3
SES 2300	Personal Training Certification Preparation	3
SES 2320	Group Fitness Instructor	3
SES 2330	Motor Learning and Development	3
SES 2340	Analysis of Motor Skills	3
SES 2350	Exercise For Special Populations	3
SES 2400	Sports Coaching: Principles and Concepts	3

[1]BIO 1100 or CHEM 1010 and CHEM 1020 will be accepted for BIO 1500.

[3]BIO-2330 and BIO-2340 together will be accepted in place of BIO-2331 and BIO-2341.

[C] = Capstone course.

STERILE PROCESSING AND DISTRIBUTION TECHNOLOGY

Certificate of Proficiency

The sterile processing and distribution technician decontaminates, inspects, assembles, and sterilizes instruments and surgical trays. The technician also manages inventory control, orders supplies, inspects, maintains, delivers and retrieves equipment and instruments for the surgery suite, emergency room and intensive care units. A hands-on clinical practicum experience in an area hospital is included in the course of study. This program prepares graduates for eligibility for the Sterile Processing and Distribution Technician Certification by the CBSPD, Certification Board for Sterile Processing and Distribution.

Degree: Students may apply credits toward the Surgical Technology Program or meet with an academic counselor to apply credits toward an Associate of Technical Studies degree.

Program Manager: 216-987-6146

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- ENG-1010
- Complete MATH-0950 with "C" or higher.
- Complete MA-1020 with "C" or higher.
- GPA required: 2.0 admission requirements; 2.0 overall.

Other Information:
- 16 students accepted per year.
- MA-1020 must have been completed within seven years of admission to program and may only be repeated once to improve a grade.
- Criminal background check required (see page 73).
- Non-native English speaking applicants are required to take and pass TOEFL with minimum scores: Reading 21, Listening 22, Writing 23, and Speaking 24. Arrangements and cost incurred for the TOEFL will be the responsibility of the student.
- Students wishing to apply coursework to the Surgical Technology Degree – to be eligible to enroll in BIO-2331 students must either achieve the appropriate placement score on the Biology placement test or complete BIO-1100 with "C" or higher or complete CHEM-1010 and CHEM-1020 with "C" or higher.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply the principles and techniques of decontamination to render medical devices safe to handle without protective attire.

2. Inspect, assemble, pack, and wrap medical devices in preparation for appropriate sterilization process and/or distribution.

3. Safely selects and performs proper sterilization techniques, validates sterility assurance level monitoring, and maintains sterilization integrity during storage.

4. Inventory, stock, and/or distribute medical/surgical supplies to meet patient care areas needs in a cost efficient manner.

5. Communicate verbally and in writing to co-workers, customers, and suppliers to ensure that pertinent departmental information is shared in a timely manner to meet organizational needs.

6. Demonstrate professional conduct and work practices according to appropriate federal regulations, industry standards, and facility policies.

7. Prepared to sit for Sterile Processing & Distribution Technician Certification Exam given by the Certification Board for Sterile Processing and Distribution (CBSPD).

Suggested Semester Sequence

First Semester		Credits
BIO-1100	Introduction to Biological Chemistry.... OR	3
BIO-1050	Human Biology [1]	
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MA-1020	Medical Terminology I	3
MATH-1060	Survey of Mathematics …OR	3
MATH-1141	Applied Algebra and Mathematical Reasoning or higher [2]	
SURT-1700	Sterile Processing Tech I	4
SURT-1720	Introduction to Hospital Administration	1
		17

Second Semester		Credits
HTEC-1110	Ethics for Health Care Professionals	1
IT-1010	Introduction to Microcomputer Applications … OR	3
IT-101H	Honors Introduction to Microcomputer Applications	
SPCH-1000	Fund of Interpersonal Communication …. OR	3
SPCH-1010	Fundamentals of Speech Communication	
SURT-1710	Sterile Processing Tech II	4
SURT-1861	Clinical Experience: Sterile Processing	2
		13
	PROGRAM TOTAL	30

[1]BIO-1050 is a lecture course only, and may be selected in place of BIO-1100 if working for the Certificate only. Students wishing to apply coursework to the Surgical Technology degree program must take BIO-1100.
[2]Students wishing to transfer coursework into the degree program should take MATH-1141.

SURGICAL TECHNOLOGY

Associate of Applied Science degree in Surgical Technology

A surgical technologist assists the surgeon and assistants by passing instrumentation and supplies during surgical procedures. As a surgical team member, surgical technologists work with other surgical personnel to prepare the operating room for a variety of surgical cases. The program provides a hands-on lab surgery and four semesters of clinical experience to enable students to gain essential surgical skills. Students will be prepared to take the Certified Surgical Technologist (CST) Examination. A surgical technologist may be employed in the surgical department of hospitals and outpatient surgery centers. The program is fully accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP).

Program Manager: 216-987-6146

Program Admission Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Complete ENG-1010 or ENG-101H with "C" or higher.
- Eligibility for MATH-1141.
- Complete the following :
  - MA-1020 with "C" grade or higher.
  - BIO-2331* (or 2330) with "C" grade or higher.
  - SURT-1000 with "B" or higher.
- Time limit on admissions requirements prior to application is seven years (see Notes below).
- GPA required: 2.5 admissions requirements; 2.5 overall.

Other Information:

- Fourteen students accepted per year (contingent upon available clinical sites)
- *To be eligible to enroll in BIO-2331 students must either achieve the appropriate placement score on Biology placement test or complete BIO-1100 with "C" or higher or complete CHEM-1010 and CHEM-1020 with "C" or higher.
- All admission requirements (except ENG-1010 & MATH-1141) must have been completed within the past seven years, and may only be repeated once to improve a grade.
- Upon acceptance to the program and prior to a clinical assignment, students must submit evidence of good health, personal healthcare insurance coverage, and certification in CPR.
- Accepted candidates will be required to attend a student orientation session after acceptance into the program.
- Program only starts in the Fall Semester. Students are strongly encouraged to take BIO-2341 and BIO-2500 and may take any of the GERS and Program Requirements (other than the "SURT" courses) while waiting.
- Non-native English speaking applicants are required to take and pass TOEFL with minimum scores: Reading 21, Listening 22, Writing 23, and Speaking 24.
- Criminal background check required (see page 73).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply principles of aseptic technique in the O.R. setting according to AST guidelines.

2. Demonstrate competence in skills required during the peri-operative event to insure the clients and staff's safety and optimal surgical outcome.

3. Demonstrate professional conduct according to the AST Code of Ethics and departmental policies.

4. Apply knowledge of Anatomy and Physiology, Microbiology, Pharmacology, and Medical Terminology within the surgical environment.

5. Effectively communicate with the O.R. team members during the peri-operative event according to the facility policies & procedures and surgeon preferences.

6. Prepares graduates for the Certified Surgical Technologist (CST) Examination.

Suggested Semester Sequence

Program Admissions Requirements Semester		Credits
BIO-2331	Anatomy and Physiology I	4
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MA-1020	Medical Terminology I	3
SURT-1000	Survey of Surgical Technology	1
		11

First Semester		Credits
BIO-2341	Anatomy and Physiology II	4
HTEC-1610	Introduction to Pharmacology	2
SURT-1300	Introduction to Surgery	5
SURT-130L	Surgery Lab	2
		13

Second Semester		Credits
BIO-2500	Microbiology	4
SURT-1330	General Surgery	5
SURT-1911	Clinical Experience I	3
		12

Summer Semester		Credits
SURT-1921	Clinical Experience II	2
		2

Third Semester		Credits
MA-2010	Medical Terminology II	2
MATH-1141	Applied Algebra and Mathematical Reasoning or higher	3
SURT-2300	Surgical Specialties	5
SURT-2851	Clinical Experience III	3
		13

Fourth Semester		Credits
SURT-2862	Clinical Experience IV [C]	4
PHIL-2050	Bioethics	3
SPCH-1000	Fundamentals of Interpersonal Communication … OR	3
SPCH-1010	Fundamentals of Speech Communication …OR	
SPCH-101H	Honors Fundamentals of Speech Communication	–
		10

| | PROGRAM TOTAL | 61 |

[C] = Capstone course.

VETERINARY TECHNOLOGY

Associate of Applied Science degree in Veterinary Technology

   Veterinary technicians work under the supervision of a licensed veterinarian to provide health care for animals in various settings. Career options for graduate technicians include private practices, emergency clinics, specialty clinics, educational institutions, research facilities, government agencies and zoological parks. Students work with companion animals, food animals, horses, laboratory animals and exotic species throughout this program.

Program Manager: 216-987-5450

Program Admissions Requirements: Application may be submitted to the Health Careers Enrollment Center after meeting the following requirements:

- High School Diploma/GED
- Complete ENG-1010 or ENG-101H or higher with a "C" or higher.
- Complete MATH-1141 or higher with a "C" or higher.
- Complete BIO-1100 or CHEM-1010 or higher with a "C" or higher.
- GPA required: 2.5 admissions requirements, 2.0 overall.
- Written verification of 10 hours of recent (within one year of application) observation/shadowing or employment in a veterinary facility.

Other Information:
- 25 students per year are accepted into the program.
- Admissions requirement courses may be repeated only once to improve a grade below "C".
- Upon acceptance to the program and prior to matriculation, the applicant will be required to fulfill the health requirements of the veterinary technology program.
- Accepted candidates will be required to attend a group information session (information indicated in acceptance letter).
- Criminal background check required (see page 73).

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Utilize knowledge and interpersonal skills to educate clients and communicate with colleagues.

2. Obtain, process, analyze, and record accurate multi-modal diagnostic information.

3. Ensure compliance with state and federal regulations and act in a professional and ethical manner in accordance with AVMA and NAVTA Guidelines.

4. Identify and understand the pharmacology and effects of drugs and therapeutic substances in various animal species.

5. Operate and maintain veterinary equipment and facilities.

6. Provide proficient animal husbandry, medical, and surgical care.

7. Apply organizational principles and practices that permit a facility to provide quality patient care and client service.

Suggested Semester Sequence

First Semester		Credits
BIO-1100	Introduction to Biological Chemistry … OR	3-4
CHEM-1010	Introduction to Inorganic Chemistry … OR	
CHEM-101H	Honors Introduction to Inorganic Chemistry	
BIO-1410	Anatomy and Physiology of Domestic Animals I	4
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
VT-1100	Veterinary Medical Terminology	1
VT-1200	Veterinary Law and Ethics	1
VT-1320	Veterinary Office Applications	3
VT-1401	Veterinary Science I	4
		19 - 20

Second Semester		Credits
BIO-1420	Anatomy and Physiology of Domestic Animals II	3
MATH-1141	Applied Algebra and Mathematical Reasoning or higher	3
VT-1451	Veterinary Diagnostic Imaging	2
VT-1500	Veterinary Science II	4
VT-1520	Veterinary Parasitology	2
VT-1600	Veterinary Surgical Nursing and Assisting	3
		17

Summer Semester		Credits
BIO-2500	Microbiology	4
VT-2300	Pharmacology for Veterinary Technicians	2
VT-2401	Veterinary Pathology I	2
VT-2851	Veterinary Practicum and Seminar I	1
		9

Third Semester		Credits
SPCH-1010	Fundamentals of Speech Communication … OR	3
SPCH-101H	Honors Fundamentals of Speech Communication	3
VT-2411	Veterinary Pathology II	2
VT-2500	Small Animal Health and Disease	2
VT-2510	Large Animal Health and Disease	2
VT-2600	Anesthesiology, Emergency Techniques and Dentistry	3
VT-2860	Veterinary Practicum and Seminar II	2
		14

Fourth Semester		Credits
VT-2700	Avian and Exotic Animal Medicine	2
VT-2940	Veterinary Field Experience [C]	2
Arts & Hum/Soc & Beh Sci (see AAS Degree requirements)		3
		7

	PROGRAM TOTAL	66 - 67

[C] = Capstone course.

VISUAL COMMUNICATION & DESIGN (Digital Video and Digital Filmmaking)

Associate of Applied Business degree in Visual Communication & Design with a concentration in Digital Video and Digital Filmmaking

The goal of the Digital Video and Digital Filmmaking Degree Program is to prepare graduates for a rewarding career in Motion Media. Possible career paths include television production, short and feature filmmaking, editorial, special effects/ visual effects production, motion graphics design, and motion media content creation and preparation for High Definition distribution in a variety of formats from theatrical, to corporate in-house, to web-based delivery. The curriculum is based on professional standards drawn from the practices of advertising agencies, design studios, media and independent production companies and in-house or corporate media departments.

Program Manager: 216-987-5567

Program Admission Requirements:
- High School Diploma/GED not required, but highly recommended
- Eligibility for ENG-1010 highly recommended
- Eligibility for MATH-1060 or higher, highly recommended

Other Information:
- Contact Program Coordinator for additional information
- Non-degree students may enroll in individual courses if prerequisites are met.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply good interpersonal skills including collaboration, flexibility, adaptability, cultural diversity, stress management, coping with frustration, work ethic, and willingness to learn new skills to work as an effective team member to meet the client's needs.

2. Use good listening, written, and verbal communication skills to present yourself professionally, follow directions, and interact with clients, stakeholders, and project team members.

3. Use good time management, organizational, flowcharting, business, and technical skills to manage multiple responsibilities and meet project deadlines.

4. Apply knowledge of copyright law and ethics to ensure the integrity of project for the client.

5. Tell a story using appropriate digital media, principles of design, color, typography, motion, sound and timing to create an emotional response that supports the client's message.

6. Research and acquire necessary source content.

7. Determine tools, timeline and scope of project.

8. Compellingly present concept to client or stakeholder.

9. Translate a stakeholder's need into a creative concept that motivates, persuades or causes a specific outcome.

10. Apply technical components of visual media production adapted to location; such as, live event, studio, or on-location.

11. Utilize technical problem solving and creative thinking skills to combine production elements with a focus on media editing/compositing/motion design with an understanding of content distribution.

Suggested Semester Sequence

First Semester		Credits
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MATH-1xxx	1000-level MATH course or higher	3
VC&D-1015	Digital Studio Basics	3
VC&D-1000	Visual Communication Foundation	3
VCPH-1261	Photography I	3
VCDV-1180	Introduction to Digital Video and Digital Filmmaking	3
		18

Second Semester		Credits
ENG-1020	College Composition II … OR	3
ENG-102H	Honors College Composition II	
JMC-1310	Film Appreciation	3
RAT-1100	Sound Recording and Design	3
VCDV-2180	Digital Cinematography	3
VC&D-1430	2D Design	3
		15

Third Semester		Credits
BADM-1050	Professional Success Strategy	3
MARS-2110	Editing	3
VCDV-2280	Advanced Digital Video and Digital Filmmaking: Exploring Genre and Technique	3
VCDV-2480	Motion Graphics for Digital Video	3
VCIM-2270	Animation for the Web and Media	3
		15

Fourth Semester		Credits
VC&D-2530	Professional Practice in Visual Communication and Design … OR	3
MARS-2940	MARS Field Experience	1 - 2
VCDV-2680	Advanced Digital Cinematography	3
VCDV-2xxx	VCDV Elective … OR	3
MARS-xxxx	MARS elective	
VC&D-2991	Portfolio Preparation [C] [1]	3
Soc & Beh Sci/Sci (See AAB/AAS degree requirements)		3
		13 - 15

	PROGRAM TOTAL	61 - 63

[1]MARS-2990 will be accepted in place of VC&D-2991.

[C] = Capstone course.

ELECTIVES

Technical Elective		Credits

To fulfill the technical elective requirement for any 2000 level VCDV class (VCDV 2xxx) you must choose from the following options

MARS 2120	Advanced Editing	3
VCDV 2380	Visual Effects Compositing for Digital Video	3
VCDV 2580	Digital Versatile Disk (DVD) Authoring and Design	3
VCDV 2780	Advanced Motion Graphics	3

VISUAL COMMUNICATION & DESIGN (Graphic Design)

Associate of Applied Business degree in Visual Communication & Design with a concentration in Graphic Design

The Graphic Design degree program prepares students for positions with graphic design firms, in-house design departments, exhibit and package design firms, publishers, broadcast media, printers and media design companies. The Graphic Design curriculum is based on professional standards in creating a designer portfolio, preparing the graduates for a variety of full-time or freelance employment in the graphic design industry. Students have an opportunity to develop or upgrade drawing and computer graphics skills for communicating visually. Emphasis is on design for print and media, studio skills and critical thinking applications. Problem solving and research concept development projects are explored and applied as they relate to the graphic design professional.

Program Manager: 216-987-5567

Program Admission Requirements:
- High School Diploma/GED highly recommended, but not required
- Eligibility for ENG-1010 highly recommended
- Eligibility for MATH-1060 or higher* highly recommended
- Complete VC&D-1010

Other Information:
- Contact Program Coordinator, Program Manager or Counselor for additional information
- Non-degree students may enroll in individual courses with departmental approval.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate and connect verbally and in writing to clients, colleagues, and other professionals.

2. Conduct yourself professionally and ethically according to professional standards.

3. Develop team skills including taking and giving constructive criticism, leading and /or following directions.

4. Apply basic production knowledge, including fundamental understanding of page layout, typography, photography, color, and use computer and design software skills to effectively execute all aspects of production – print and/or web.

5. Apply the knowledge of basic business and design concepts, including design history and trends, photography and illustration, basic typography skills, appropriate mediums and business concepts including dealing with vendors, organizational hierarchy and workflow, written and verbal communication skills in order to translate ideas into final art that meets business need.

6. Use design principles – color, composition, and type – to executive project objectives.

Suggested Semester Sequence

First Semester		Credits
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
VC&D-1000	Visual Communication Foundation	3
VC&D-1015	Digital Studio Basics	3
VC&D-1061	History of Graphic Design	3
VC&D-1200	Typography and Layout	3
Arts & Humanities (see AAB/AAS degree requirements)		3
		18

Second Semester		Credits
ART-1050	Drawing I	3
MATH-1xxx	1000-level MATH course or higher	3
VC&D-1430	2D Design	3
VCGD-1500	Advertising and Design	3
Communication…(See AAB Degree requirements)		3
		15

Third Semester		Credits
VC&D-2301	Graphic Design and Illustration	3
VCGD-2231	Publication Design	3
VCGD-2331	Brand Identity Design	3
VCXX-xxxx	Visual Communication & Design elective	3
Soc & Beh Sci (See AAB/AAS degree requirements)		3
		15

Fourth Semester		Credits
VC&D-2701	Media Design	3
VC&D-2991	Portfolio Preparation [C]	3
VCGD-2431	Package Design … OR	3
VCAD-2520	Creative Advertising Campaign	
VCGD-2631	Graphic Design Studio … OR	3
VCAD-2621	Advertising Studio I	
VCXX-xxxx	Visual Communication & Design elective	3
		15

	PROGRAM TOTAL	63

[C] = Capstone course.

VISUAL COMMUNICATION & DESIGN (Graphic Design)

Certificate of Proficiency

This one-year certificate program is designed to accommodate individuals who want to upgrade their design, drawing and computer graphics skills. The courses are designed to improve the graduate's design, drawing, research, and problem solving techniques.

Degree: Students may apply credits toward the Visual Communication & Design program with a concentration in Graphic Design.

Program Admission Requirements:
- High School Diploma/GED highly recommended, but not required.
- Eligibility for ENG-1010 highly recommended.
- Eligibility for MATH-1060 or higher highly recommended.
- Complete VC&D-1015.

Other Information:
- Non-degree students may enroll in individual courses with departmental approval.

VISUAL COMMUNICATION & DESIGN (Graphic Design) (Continued)

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Communicate and connect verbally and in writing to clients, colleagues, and other professionals.

2. Conduct yourself professionally and ethically according to professional standards.

3. Develop team skills including taking and giving constructive criticism, leading and /or following directions.

4. Apply basic production knowledge, including fundamental understanding of page layout, typography, photography, color, and use computer and design software skills to effectively execute all aspects of production – print and/or web.

5. Apply the knowledge of basic business and design concepts, including design history and trends, photography and illustration, basic typography skills, appropriate mediums and business concepts including dealing with vendors, organizational hierarchy and workflow, written and verbal communication skills in order to translate ideas into final art that meets business need.

Suggested Semester Sequence

First Semester		Credits
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
VC&D-1000	Visual Communication Foundation	3
VC&D-1015	Digital Studio Basics	3
VC&D-1060	History and Trends in Visual Communication and Design	3
VC&D-1200	Typography and Layout	3
VC&D-1430	2D Design	3
		18

Second Semester		Credits
MATH-1060	Survey of Mathematics or higher	3
VC&D-2301	Graphic Design and Illustration	3
VCGD-1500	Advertising and Design	3
VCIL-1640	3D Design	3
VCGD-2231	Publication Design … OR	3
VCGD-2331	Brand Identity Design … OR	
VCGD-2431	Package Design	
VC&D-2701	Media Design … OR	3
VC&D-2991	Portfolio Preparation	–
		18
	PROGRAM TOTAL	36

VISUAL COMMUNICATION & DESIGN (Illustration)

Associate of Applied Business degree in Visual Communication & Design with a concentration in Illustration

The Illustration degree program prepares students for positions as 2D or 3D illustrators in design and visualization studios, ad agencies, publishing houses, media studios or freelance contractors. The Illustration curriculum is based on professional standards in building a marketable portfolio, preparing graduates for a variety of full-time or freelance employment in Visualization, Illustration and Visual Communication industries. Students have an opportunity to develop or upgrade drawing, rendering, modeling and digital illustration skills. Emphasis is on the creation of illustration for print and digital media, studio skills, conceptual and critical thinking, problem solving and editorial research projects as they relate to the illustration professional.

Program Manager: 216-987-5567

Program Admission Requirements:
- High School Diploma/GED highly recommended, but not required
- Eligibility for ENG-1010 highly recommended
- Eligibility for MATH-1060 or higher highly recommended
- Contact Program Coordinator, Program Manager or Counselor for additional information

Other Information:
- Non-degree students may enroll in individual courses with departmental approval.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply effective verbal, written and visual communication skills to present a concept, idea, or portfolio to co-workers, clients and other professionals.

2. Follow directions, give and receive criticism and work effectively in a team environment to solve visual communication problems.

3. Research and assess technical and creative aspects of multiple projects to satisfy client needs and to continually evaluate and improve professional skills and practices.

4. Apply knowledge of art history, theories and principles to traditional and digital drawing and design skills for visual communication applications relevant to contemporary applied art markets.

5. Develop career goals, applying basic business and financial skills, self discipline and motivation, versatility and adaptability, self promotion and communication skills to create a sustainable art business.

VISUAL COMMUNICATION & DESIGN (Illustration) (Continued)

Suggested Semester Sequence

First Semester		Credits
ART-1050	Drawing I	3
ART-1080	Visual Design I … OR	3
VC&D-1000	Visual Communication Foundation	
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I	
MATH-1xxx	1000-level MATH course or higher	3
VC&D-1015	Digital Studio Basics	3
		15

Second Semester		Credits
ART-1060	Drawing II	3
VC&D-1430	2D Design	3
VCIL-1141	Rendering Techniques	3
VCIL-1640	3D Design	3
Communication…(See AAB Degree requirements)		3
		15

Third Semester		Credits
VC&D-2301	Graphic Design and Illustration	3
VCIL-2040	3D Motion	3
VCIL-2141	Illustration Techniques	3
VCXX-xxxx	Visual Communications elective	3
Arts & Hum (see AAB/AAS degree requirements)		3
		15

Fourth Semester		Credits
VC&D-2991	Portfolio Preparation C	3
VCIL-2341	Illustration for Story, Sequence & Narrative	3
VCIL-2641	Illustration Studio … OR	3
VCIL-2540	3D Studio	
VCIM-2270	Animation for the Web and Media…OR	3
VCIM-1200	Game Design I: Introduction to Game Design	
Soc & Beh Sci/Sci (See AAB/AAS degree requirements)		3
		15
	PROGRAM TOTAL	60

C = Capstone course.

3D ANIMATION
Short-Term Certificate

Students who participate in the certificate sequence will develop knowledge, skills and abilities in 3D Animation techniques to prepare for professional and academic opportunities in Visual Communication and Design or related fields that emphasis 3D Modeling, Animation, Illustration and Visualization.

This certificate is intended for students with no previous design experience or students interested in an immersive exploration of 3D Animation. Credits can apply to associate degrees in Visual Communication and Design.

Degree: Students may apply credits toward any of the Associate of Applied Business degrees under Visual Communication and Design.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Listen and understand complex ideas, present and communicate visually, verbally and in writing to colleagues and clients.
2. Work independently and as an organized member of a production team to meet client requirements on time and within budget.
3. Demonstrate professional work ethics and a passion for life long learning and networking.
4. Use design elements, principles and the basic building blocks of the 3D process. Modeling, lighting/texturing, animation and rendering to create a 3-D composition.
5. Design a concept, strategy and story board to visualize a product or message to reach the target audience that meets the production schedule and budget.
6. Use appropriate hardware, software and resources to create high quality computer graphic imagery in a production environment.
7. Composite/edit production elements to deploy final product that meets client distribution requirements.
8. Develop career goals, applying basic business and financial skills, self discipline and motivation, versatility and adaptability, self promotion and communication skills to create a sustainable business.

Suggested Semester Sequence

First Semester		Credits
VC&D-1015	Digital Studio Basics	3
VCIL-1640	3D Design	3
VCIL-2040	3D Motion	3
VCIM-1200	Game Design I: Introduction to Game Design	3
		12

Second Semester		Credits
VC&D-2701	Media Design	3
VCIL-2540	3D Studio	3
VCIM-2270	Animation for the Web and Media	3
VCXX-xxxx	Visual Communication & Design elective	3
		12
	PROGRAM TOTAL	24

3D DESIGN

Short-Term Certificate

The certificate in 3D Design provides students with education and professional development opportunities in 3D Design and Visualization. Students will participate in a fast-track sequence focusing on the fundamentals of 3D Modeling and Animation.

This certificate is intended for students with previous design experience or students who want a focused educational experience in 3D Design and Visualization.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1   Listen and understand complex ideas, present and communicate visually, verbally and in writing to colleagues and clients.

2   Work independently and as an organized member of a production team to meet client requirements on time and within budget.

3   Demonstrate professional work ethics and a passion for life long learning and networking.

4   Use design elements, principles and the basic building blocks of the 3D process. Modeling, lighting/texturing, animation and rendering to create a 3-D composition.

5   Design a concept, strategy and story board to visualize a product or message to reach the target audience that meets the production schedule and budget.

6   Use appropriate hardware, software and resources to create high quality computer graphic imagery in a production environment.

7   Composite/edit production elements to deploy final product that meets client distribution requirements.

8   Develop career goals, applying basic business and financial skills, self discipline and motivation, versatility and adaptability, self promotion and communication skills to create a sustainable business.

Suggested Semester Sequence

First Semester		Credits
VC&D-1015	Digital Studio Basics	3
VCIL-1640	3D Design	3
VCIL-2040	3D Motion	3
VCIM-1200	Game Design I: Introduction to Game Design	3
		12

Second Semester		Credits
VCIL-2540	3D Studio	3
VCXX-xxxx	Visual Communications elective	3
		6
	PROGRAM TOTAL	18

VISUAL COMMUNICATION & DESIGN (Photography)

Associate of Applied Business degree in Visual Communication & Design with a concentration in Photography

This concentration prepares students to enter a broad range of photographic careers in editorial, advertising, corporate communications, wedding and portrait photography, digital retouching and post production, styling and production assisting. The curriculum is based on professional imaging standards and practices in a rapidly changing field. Emphasis on development of the visual, technical and business skills required in today's market enables our graduates to respond effectively to the changing demands of our multimedia communications environment.

Program Manager: 216-987-5567

Program Admission Requirements:
• Complete VCPH 1261 with grade of "B" or higher.

Other Information:
• Submission of a portfolio.
• Portfolio reviews conducted twice per year at the end of Fall and Spring Semesters.
• Departmental approval may be granted for enrollment in individual courses for students who are not degree majors.
• Some photography courses may be available at Metropolitan Campus; completion of degree requires attendance at Western Campus.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1.   Determine and develop photographic possibilities and solutions and produce compelling images that communicate a message through lighting, color, special techniques and subject knowledge.

2.   Apply skills in camera operation, exposure and post production using Photoshop and Lightroom, color management, color calibration and proofing and output; perform digital asset management and use photographs in multi-media applications including websites, Power Point programs, FTP sites and print media.

3.   Demonstrate strong work ethic and high standards of quality; apply listening, learning, and communication skills and employ interpersonal skills that display maturity and familiarity with legal and business issues of the photographic imaging field.

4.   Apply knowledge of camera operation, Mac OSX, and Photoshop and Lightroom to perform onset diligence including forward thinking troubleshooting, verifying exposure histogram, checking lights and being visually alert for malfunctions.

5.   Apply basic knowledge of grip, lighting and light modification tools, and demonstrate flexibility and adaptability when working in a studio and/or location environment.

6.   Check, troubleshoot and pack photographic, lighting and grip equipment prior to a shoot, be alert for mechanical and environmental problems while on set and be able to respond to those problems in a professional manner.

VISUAL COMMUNICATION & DESIGN (Photography) (Continued)

Suggested Semester Sequence

First Semester		Credits
ENG-1010	College Composition I … OR	3
ENG-101H	Honors College Composition I
VC&D-1000	Visual Communication Foundation	3
VC&D-1015	Digital Studio Basics	3
VCPH-1150	History of Photography	3
VCPH-1261	Photography I	3
	15

Second Semester		Credits
MATH-1xxx	1000-level MATH course or higher	3
SOC-1010	Introductory Sociology … OR	3
SOC-101H	Honors Introductory Sociology
VCPH-1450	Digital Imaging I	3
VCPH-2260	Photography II	3
VCPH-2050	Commercial Studio Techniques I	3
	15

Third Semester		Credits
VC&D-1200	Typography and Layout	3
VCDV-1180	Introduction to Digital Video and Digital Filmmaking	3
VCPH-2450	Digital Imaging II	3
VCPH-2550	Commercial Studio Techniques II	3
VCPH-2660	Photography III	3
	15

Fourth Semester		Credits
JMC-1310	Film Appreciation	3
SPCH-1000	Fundamentals of Interpersonal Communication … OR	3
SPCH-1010	Fundamentals of Speech Communication … OR
SPCH-101H	Honors Fundamentals of Speech Communication
VCPH-2530	Professional Practices in Photography	3
VCPH-2541	Individual Projects - Photography	3
VCPH-2760	Editorial Photography	3
VCPH-2990	Photographic Portfolio Preparation [C]	2
	17
PROGRAM TOTAL	62

[C] = Capstone course.

VISUAL COMMUNICATION & DESIGN (Web and Interactive Media)

Associate of Applied Business degree in Visual Communication & Design with a concentration in Web and Interactive Media

The goal of the Web & Interactive Media degree program is to prepare our graduates for a rewarding career in the growing fields of Web, Interactive Media and Game Design. The curriculum is based on the professional standards and best practices of web, media and game development companies, in-house or corporate media departments, design studios, and advertising agencies. Students are assisted in the development of studio, technical and professional skills while building a strong, marketable portfolio. The program offers coursework in a variety of media, with two distinct areas of specialization: Web Design and Construction and Game Design.

Program Admission Requirements:
- High School Diploma/GED highly recommended, but not required
- Eligibility for ENG-1010 recommended
- Eligibility for MATH-1250 highly recommended
- Complete VC&D-1000
- Complete VC&D-1015

Other Information:
- Contact Program Coordinator for additional information.
- Non-degree students may enroll in individual courses if they meet prerequisites or with departmental approval.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply good interpersonal skills including collaboration, flexibility, adaptability, cultural diversity, stress management, coping with frustration, work ethic, willingness to learn new skills to work as an effective team member to meet the client's needs.

2. Use good listening, written, and verbal communication skills to present oneself professionally, follow directions, and interact with clients, stakeholders, and project team members.

3. Use good time management, organizational, flowcharting, business, and technical skills to manage multiple responsibilities and meet project deadlines.

4. Apply knowledge of copyright law and ethics to ensure the integrity of project for the client.

5. Tell a story using appropriate digital media, principles of design, color, typography, motion, sound and timing to create an emotional response that supports the client's message.

6. Gather and assess information relevant to the project/design challenge; research and legally acquire necessary source content.

7. Evaluate situations, challenges, and processes for business and create a plan for appropriate solutions.

8. Present ideas and strategies to clients and co-workers that clarify the proposed visual story, plan of execution and measureable outcome.

VISUAL COMMUNICATION & DESIGN
(Web and Interactive Media)
(Continued)

9. Develop a fundamental knowledge of industry standard tools and best practices for visual and analytical media development.

10. Measure and analyze outcomes of projects and campaigns.

Suggested Semester Sequence

First Semester		Credits
ENG-1010	College Composition I	3
MATH-1250	Contemporary Mathematics or higher	4
VC&D-1000	Visual Communication Foundation	3
VC&D-1015	Digital Studio Basics	3
VCIM-1570	Web Publishing I: HTML (a)… OR	3
VCIM-1200	Game Design I: Introduction to Game Design (b)…	
		16

Second Semester		Credits
VC&D-1200	Typography and Layout	3
VC&D-1430	2D Design	3
VCIL-1640	3D Design	3
VCIM-1770	Web Publishing II: Site Theory & Construction (a) … OR	3
VCIM-1400	Game Design II: Game Engines (b)	3
VCIM-1970	Midpoint Portfolio Review	1
Communication…(See AAB Degree requirements)		3
		16

Third Semester		Credits
VC&D-2530	Professional Practice in Visual Communication and Design	3
VCIM-2280	Web Publishing III: Media Rich Websites (a)… OR	3
VCIM-2200	Game Design III: Game Design Studio (b)	3
VCIM-2270	Animation for the Web and Media	3
VCIM-2371	Interactive Media I	3
Arts & Hum (see AAB/AAS degree requirements)		3
		15

Fourth Semester		Credits
VCIM-2290	Web Publishing IV: Data Driven Sites … OR	3
VCIM-2380	Interactive Media II: App Design … OR	
IT-2400	Unity Game Programming	
VCIM-2071	Service-Learning Web and Interactive Studio … OR	3
VCIM-2940	Field Experience … OR	
VC&D-2830	Cooperative Field Experience	
VC&D-2991	Portfolio Preparation C	3
VCXX-xxxx	Visual Communication & Design elective	3
Soc & Beh Sci/Nat Sci (see AAB/AAS Degree Requirements)		3
		15

	PROGRAM TOTAL	62

C = Capstone course.

OPTIONS

(a)Technical Electives for Web Design & Construction

Specialist		Credits
Web Design & Construction Specialist: Helps students to develop advanced web design & construction skills.		
VCIM 1570	Web Publishing I: HTML	3
VCIM 1770	Web Publishing II: Site Theory & Construction	3
VCIM 2280	Web Publishing III: Media Rich Websites	3
		62 – 65

(b)Technical Electives for Game Designer		Credits
Game Designer: Helps students learn fundamentals of 2D and 3D Game Design for various platforms including console, computer and mobile devices.		
VCIM 1200	Game Design I: Introduction to Game Design	3
VCIM 1400	Game Design II: Game Engines	3
VCIM 2200	Game Design III: Game Design Studio	3
		62 – 65

ELECTIVES

Game Design		Credits
The following courses are recommended electives for students pursing Game Design. Courses cannot be used for both a requirement and elective (in the case of an "or" selection in the semester sequence).		
IT 2400	Unity Game Programming	3
VC&D 2701	Media Design	3
VCIL 2040	3D Motion	3
VCIM 1570	Web Publishing I: HTML	3
VCIM 1770	Web Publishing II: Site Theory & Construction	3
VCIM 2380	Interactive Media II: App Design	3
VCIM 2571	Interactive Media Studio	3
VCIM 2800	Special Advanced Topics in Web & Interactive Media	3

Web Design & Construction & Game Design		Credits
The following courses are recommended electives for students pursing Web Design & Construction. Courses cannot be used for both a requirement and elective (in the case of an "or" selection in the semester sequence).		
VC&D 2701	Media Design	3
VCDV 1180	Introduction to Digital Video and Digital Filmmaking	3
VCIL 2040	3D Motion	3
VCIM 1200	Game Design I: Introduction to Game Design	3
VCIM 1400	Game Design II: Game Engines	3
VCIM 2290	Web Publishing IV: Data Driven Sites[1]	3
VCIM 2380	Interactive Media II: App Design[1]	3
VCIM 2571	Interactive Media Studio	3
VCIM 2800	Special Advanced Topics in Web & Interactive Media	3
VCPH 1261	Photography I	3
		6

GAME DESIGN
Short-Term Certificate

The Game Design certificate provides students with a foundation focusing on the fundamentals of 2D and 3D Game Design for various platforms including console, computer and mobile devices. Completion of this certificate will provide students with applied experience utilizing industry standard tools and techniques to develop Games for a broad audience.

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Apply effective verbal, written and visual communication skills to present a game concept to potential clients and other designers.

2. Work independently and as a member of a design team to create a game within a time and defined parameters.

3. Use theories of game design to create an interactive experience and framework around a theme for a targeted/chosen audience.

4. Plan, design and build assets, mechanics and rules to assemble a playable prototype.

5. Develop, refine and evaluate the game with the appropriate digital or analog tools to produce the final product for a chosen gaming platform.

6. Deploy the game through appropriate channels.

Suggested Semester Sequence

First Semester		Credits
VC&D-1015	Digital Studio Basics	3
VCIL-1640	3D Design	3
VCIL-2040	3D Motion	3
VCIM-1200	Game Design I: Introduction to Game Design	3
VCIM-1400	Game Design II: Game Engines	3
		15

Second Semester		Credits
VC&D-2991	Portfolio Preparation … OR	3
VCIL-2540	3D Studio … OR	
VCIM-2571	Interactive Media Studio	
VCIM-2200	Game Design III: Game Design Studio	3
VCIM-2270	Animation for the Web and Media	3
VCIM-2371	Interactive Media I … OR	3
IT-2400	Unity Game Programming	_
		12
	PROGRAM TOTAL	27

WEB DESIGN & DEVELOPMENT
Certificate of Proficiency

The goal of the Certificate of Proficiency in Web Design Development is to prepare candidates for a rewarding career in this expanding field. The curriculum is based on web standards and best practices of web design development companies, as well as in-house or corporate web teams. Learners are assisted in the development of technical, design and professional skills while building a strong, marketable portfolio. The certificate offers in depth coursework in a broad range of web related skills, from coding to user experience. This sequence is especially beneficial for those who already hold a degree in a related field but wish to update or add web design development to their skillset. Learners who wish to apply these courses to obtain an Associate of Applied Business degree in Visual Communication and Design with a concentration in Web and Interactive Media, may do so seamlessly.

Program Admission Requirements:
- High School Diploma/GED not required, but highly recommended
- Eligibility for ENG-1010 recommended
- Eligibility for MATH-1060 or higher highly recommended
- Complete VC&D-1000
- Complete VC&D-1015

Program Outcomes: This program is designed to prepare students to demonstrate the following program outcomes:

1. Utilize interviews, surveys, questionnaires and general research to asses client and end users needs. Identify possible technical and organizational solutions to meet desired outcomes.

2. Build wireframes, flowcharts, lists, navigational structure and visual designs per research and client consensus.

3. Construct websites per specifications, conduct usability and technical testing, make corrections and adjustments as needed and deploy. Measure and analyze post-execution outcomes.

4. Develop essential interpersonal skills including collaboration, adaptability, presenting ideas and understanding cultural diversity. Practice maintaining a good attitude, balancing multiple deadlines, work ethic, listening, written, and verbal communication skills. Utilize knowledge of copyright law and ethics to ensure the integrity of project. Plan for ongoing professional development.

Suggested Semester Sequence

First Semester		Credits
VC&D-1000	Visual Communication Foundation	3
VC&D-1015	Digital Studio Basics	3
VCIM-1570	Web Publishing I: HTML	3
VCIM-1770	Web Publishing II: Site Theory & Construction	3
VCIM-2270	Animation for the Web and Media … OR	3
VC&D-1430	2D Design	
		15

Second Semester		Credits
VC&D-1200	Typography and Layout	3
VC&D-2701	Media Design	3
VCIM-2071	Service-Learning Web and Interactive Studio … OR	3
VC&D-2991	Portfolio Preparation	
VCIM-2280	Web Publishing III: Media Rich Websites	3
VCIM-2290	Web Publishing IV: Data Driven Sites	3
		15
	PROGRAM TOTAL	30